



JOURNAL OF THE Royal United Service Institution

PUBLISHED UNDER THE AUTHORITY OF THE COUNCIL

Editor - Captain H. GARBETT, R.N. (Retired).

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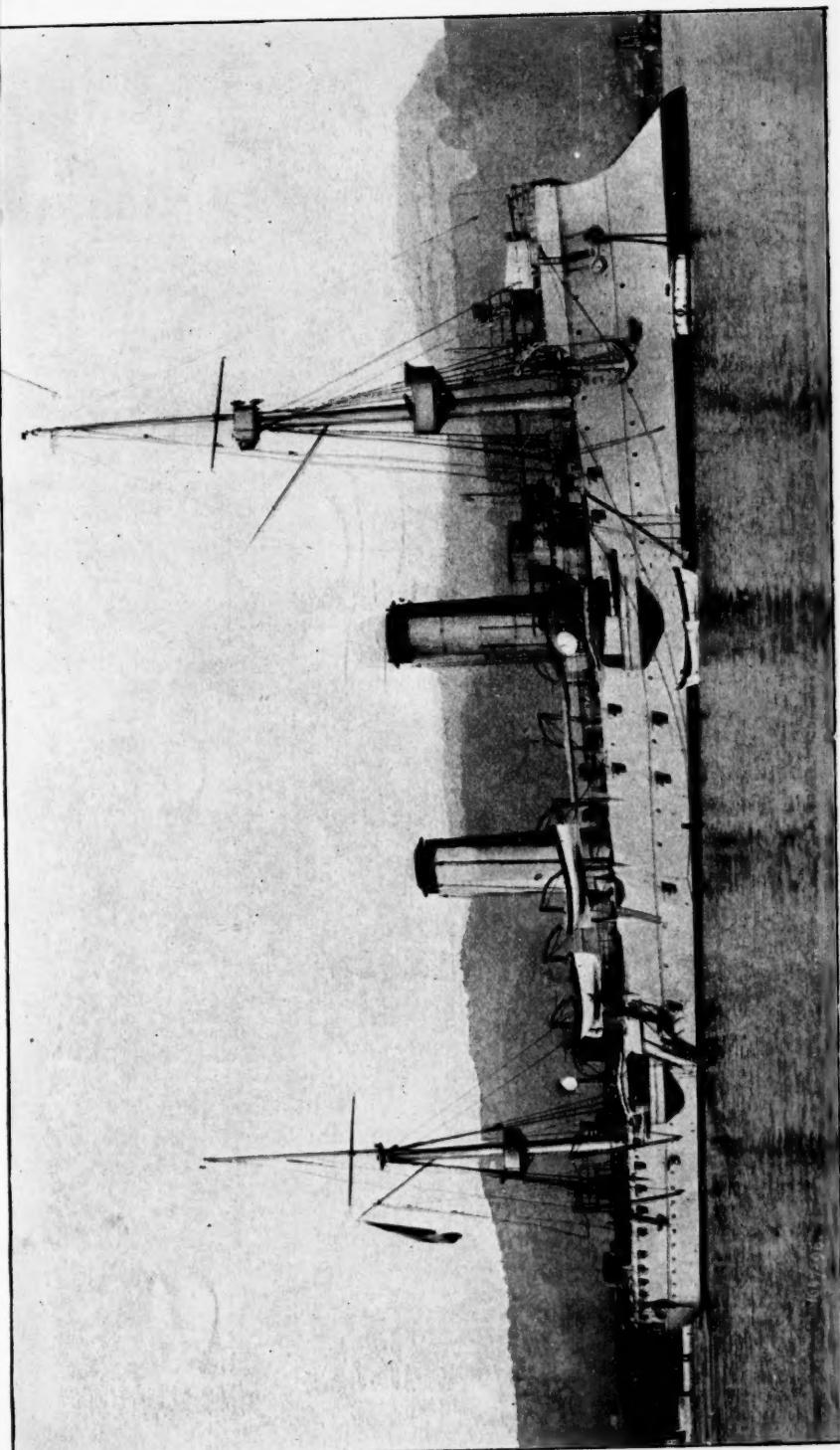
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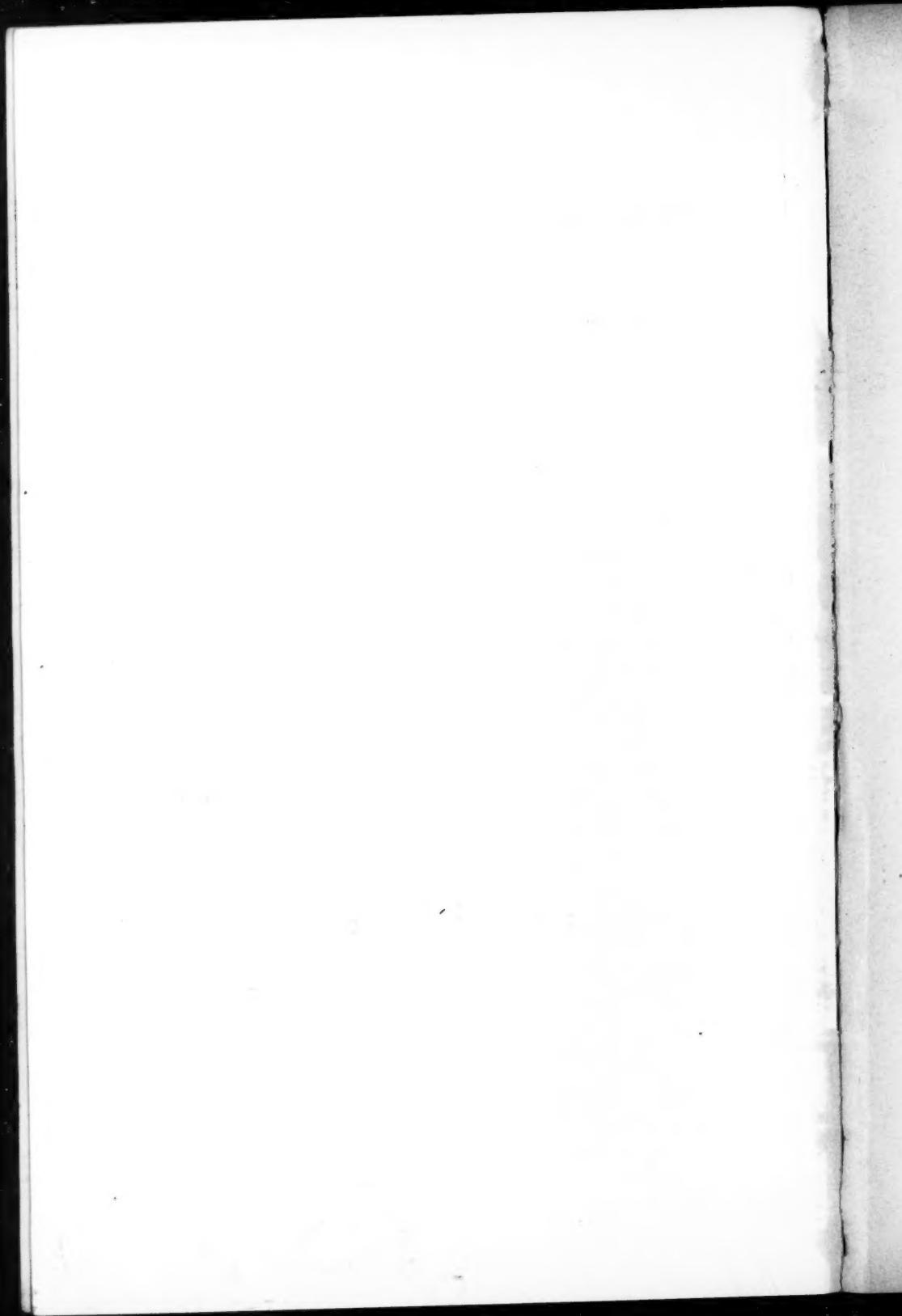
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J. J. Kelher & Co., London.





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VOL. XLII.

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No. 245.

[Authors alone are responsible for the contents of their respective Papers.]

STRATEGY AND ITS TEACHING.

*By Lieut.-Colonel G. F. R. HENDERSON, the York & Lancaster Regt.
(Professor of Military Art and History, The Staff College.)*

Wednesday, June 8th, 1898.

Major-General J. F. MAURICE, C.B., in the Chair.

I.

THE phrase "War on the Map" may not be the best definition of strategy, but it has two advantages—it is short and it is comprehensive. It includes even more than the various processes which follow mobilisation, viz., the determination of objectives, the choice of a line of operations, the deployment of the army, the marches to the battle-field, the reaping of the fruits of victory, or escape from the consequences of defeat. Strategy does not await the declaration of war to spring into being. In a well-regulated State it is seldom inactive. It cannot be disassociated from statesmanship without prejudice to the national welfare, for it is concerned as much with preparation for war as with war itself, and in every question of foreign, and in many of home, policy, it calls for attention and consideration. It is, in fact, a branch of government, and the nation which ignores it, which puts it out of sight until war is imminent, and which refuses to accede to its demands in time of peace, invariably pays dear for its short-sightedness. If

"Hell has no fury like a woman scorned,"

human affairs have no nemesis so terrible as neglected strategy. We have before our eyes at this present moment a case in point. If the United States, while they had still time, had provided the means of following up a naval success, the Philippines might have been captured within a month of Admiral Dewey's brilliant victory, and the moral effect of such swift and vigorous strategy have been felt in every quarter of the globe. But the government was unprepared. It relied upon its fleet, forgetting that the scope of the sea-power is limited, and its action slow, that a navy is like the artillery of an army, preparing and supporting the attack, but unable of itself to bring matters to a decisive issue. Now, like ourselves in like case, after the bombardment of Alexandria, the nation is paying the penalty. Because its army was unready, deficient in numbers, in equipment, and in organi-

sation ; because transport was wanting, the enemy has received a gratuity of much time and much encouragement.

But readiness for war has a wider meaning in States less isolated than the United States. It involves more than the provision of adequate numbers, the training of the troops, the system of mobilisation, the accumulation and the distribution of munitions and equipment. It involves more than the collection of information and the preparation of plans of campaign. *Le secret de guerre*, said Napoleon, *est dans le secret des communications* ; and it is with communications that the strategy of peace has mainly to do. Not only have all possible theatres of war—provinces on the frontier, and countries beyond the frontier—to be studied and surveyed, but these theatres must be prepared. All lines of communication, roads, railways, waterways, have a military as well as a commercial interest, and, if the demands of strategy are complied with, some must be constructed in which the commercial interest is only secondary. There may be railways or canals which bring in no present profit, but which are essential to the security, and so to the prosperity, of an empire. Harbours without trade, coaling-stations which no merchant-steamer visits may be possessions more valuable than the most fertile *hinterland*. Again, the strategy of peace has to do with fortresses, arsenals, entrenched camps, and *têtes de pont*. It is true that like Torres Vedras, Petersburg, and Plevna, these can often be improvised after hostilities have begun, and the fact that their appearance comes as a surprise may enhance their value. But their efficiency must depend on the local conditions, on the supply of labour, on finance, on prestige, on the number of troops available for garrisons ; and the strategy of fortification is so complicated that it is unwise in the extreme to postpone the consideration of these questions until war is an accomplished fact.

Lastly, the strategy of peace has to do with prestige. Of weight even in Europe, in Asia, where the conflict of interests is so fierce, and where governments are so unstable that the great game of politics is watched and discussed in every village bazaar, where a rebuff to one of the rival Powers is felt from the Dardanelles to the Yellow Sea, where self-interest reigns supreme, and loyalty, patriotism, and gratitude are almost unknown words, prestige is a most potent force.

Vast indeed, where great empires are concerned, is the scope of strategy, and terrible the responsibility of those who refuse to accept the sacrifices and pay the price which it demands. Each decade of history has its warning. Nation after nation has fallen prostrate and exhausted, bankrupt in all but honour, for the sole reason that its rulers, while providing men, armament, and equipment, neglected to prepare the ground which those men have been called upon to defend. The latest campaigns on the Continent furnish conspicuous examples. It is a general impression that von Moltke's successes in '66 and '70 were due mainly to superior numbers, training, and organisation ; but it is to be noted that the unreadiness of both Austria and France was not confined to the condition of their armies. Both, during peace, had overlooked the importance of communications. It may be true

that the German railways had not been constructed with a primary view to strategical requirements; but the fact remains that the system was far better adapted to the rapid assembly, concentration, and supply of the field armies than either the Austrian or the French. Thus at the very outset of operations, the short-sightedness of his adversaries made von Moltke a present, so to speak, of several days, and those days, skilfully utilised, practically made success a certainty.

If we turn to the question of Imperial Defence, and consider how far the lesson has been taken to heart by ourselves, I do not think that we shall find much cause for dissatisfaction. The long chain of coaling stations and naval arsenals, making good the hold of our amphibious power on our most distant provinces, is a splendid monument to the wisdom and foresight of English statesmen. Nor have our land communications been overlooked. The Canadian-Pacific Railway owes much to the encouragement received from the mother-country, and the line to Uganda, which may prove in the time to come a more important artery of defence than of trade, is an Imperial enterprise of hardly less magnitude than the occupation of the Suez Canal.

It might be argued, however, that attention has been too exclusively directed to the needs of the Sea-Power. Our great lines of communication enable us to carry out reserves with speed and safety to any part of the Empire that may be threatened, but they do not provide for the assembly and concentration of the troops upon our land frontiers. They bring them, in fact, to the immediate base of operations, but they do not assist them in their advance to the scene of action. It is to be remembered, however, that with regard to our land frontiers, whether they bound our own territories, the territories of allies whom we are pledged to protect, or territories within our "spheres of influence," the conditions of the defensive problem have undergone within the last few years a most radical change. Until a comparatively recent date the danger of these frontiers being crossed by other than a savage foe was most remote, and our policy, in such circumstances, has been to leave the establishment of communications, and the preparation of the theatre of war, to the colonies or dependencies concerned. Up to the present the system has not worked badly. No province of the Empire has sunk under the burden imposed upon it; nowhere have our frontiers been contracted. But to-day the system is inapplicable. Our land frontiers, as I have already defined them, are overshadowed by the advance of formidable rivals, and the preparations for their defence can no longer remain a local question. The means of concentrating, supplying, and supporting our troops upon the border are as much an Imperial concern as the establishment of coaling-stations or the construction of the Uganda railway. The defence of our land frontiers has become a matter of the same magnitude as the maintenance of our supremacy at sea; it must be treated, strategically, tactically, and financially, from the same Imperial standpoint; and where the local resources are insufficient they should be supplemented from the Imperial purse.

It is in India, I need hardly say, that such a change of policy is

especially imperative. To redeem our pledges, to uphold our prestige, to preserve the provinces of Afghanistan from aggression, the first thing wanting, and the second thing, and the third thing, is an adequate system of communication ; a system providing not merely for the passive defence of a river or a mountain range, but for that counter-stroke which both the strategical situation and the maintenance of our prestige make of such paramount necessity. There are those amongst us, I have little doubt, who hold the opinion that our resources would be more usefully employed in strengthening our vulnerable points than in tapping new markets ; who are aware that it is difficult to defend a frontier if there are no roads by which you can bring your troops up to it ; who would prefer to see railroads laid in Beluchistan rather than in East Africa, and who believe that it is more important to bring India closer to Persia and Herat than even to dominate the sources of the Nile. Yet those who have studied the question of our Imperial communications cannot have failed to realise the enormous difficulties, financial and otherwise, that it continually presents ; the difficulty of reconciling strategical and commercial interests, the difficulty of avoiding the resentment and irritation of other Powers, and perhaps the greatest of all, the difficulty of convincing the British electorate that an investment which gives no immediate return may still be profitable. Once appreciate the difficulties, and admiration for the wise and resolute statesmanship of successive Cabinets is the only feeling that remains. Russia is the one Power that has displayed the same vigour and consistency, and her great strategic railways, the Trans-Caucasian and the Trans-Siberian, are achievements which even surpass our own. But the difficulties of Russia, where no public opinion has to be conciliated, and where no vulnerable points exist, are far fewer, except as concerns finance, than those of England. Russia, however, has made enormous sacrifices in her attempt to secure commanding strategical positions, and it is not impossible that she has reached the limits of her endeavours. England, on the other hand, has drawn but few drafts on her Imperial treasury, and by the aid of that treasury, skilfully applied, the advantages secured by her greater rival may yet be neutralised. Communications, bases, and supply dépôts, generally cut two ways : they facilitate attack, but they offer objectives for counter-attack ; in fact, if the initiative be lost, they become embarrassments and encumbrances.

I do not think that I need apologise for introducing a lecture on practical strategy with these reflections on high politics. It is difficult, if not impossible, to divorce soldiering and statesmanship. The soldier must often be the adviser of the statesman. He is the immediate guardian of our prestige. He alone is familiar with our distant borders. Communications, fortresses, arsenals, the preparation of the theatres of war, are his especial concern ; and with an Army so small and so scattered as our own, protecting so vast an extent of territory, it is inevitable that this work should fall into many hands, some of them of no high rank. Semi-independent commands are numerous throughout the Empire, and so great are their responsibilities, so far removed are they from the supreme control, that in each one of them the functions of the staff, however small the

personnel, are as onerous and important as at head-quarters. Intelligence, mobilisation, topographical, and what I may call strategical, duties, *i.e.*, the planning of campaigns and the preparation of theatres of war, have all to be discharged, and the neglect of any one of them, in any quarter whatsoever, may, as we discovered in South Africa, mean disaster, and even disgrace. If our marches are to be adequately protected, it is above all things important that the wardens should be competent to counsel and to warn ; and a knowledge of Imperial strategy is thus as essential to every general and staff officer employed in our outlying provinces as vigilance, foresight, and hard thinking.

II.

But when the work of preparation is finished, when the conflict is inevitable, and statesmanship can do no more, strategy still controls events ; and so long as armed forces still hold the field, it is the most powerful factor on the theatre of war. Perhaps this is not always realised. War is too often regarded as a series of battles and sieges ; success as the result of higher courage and better training ; and the tactician, leading his troops to victory, is a more popular personage than the strategist, poring over his map, and leaving to others the perils and the glory of the fight. Yet it is the marches and manœuvres, the study of the map, the plans thought out perhaps months before the campaign begins, that give the tactician his opportunity. The ablest commanders are often robbed of half their laurels by the critics, and the more skilful the strategy and the tactics the less the praise that is awarded them. The ordinary conception of brilliant leading is the defeat of a large force by a small ; not, as it should be, the concentration of superior strength upon the battle-field, and the direction of the attack in such a manner as to make victory both certain and decisive. We hear generals belittled because their victories have been cheaply won. Unless they can show a large "butcher's bill" it is assumed that the enemy must either have been cowardly or inefficient ; and the skill which brought the army to the right place at the right time, which settled the time and the direction of the attack—the psychological moment and the most vulnerable point—and which struck so hard at the enemy's *moral* that his heart turned to water when the first shot was fired, is forgotten or overlooked.

If the far-reaching effect of strategy is not always appreciated in England it is probably because in many of our campaigns it plays so small a part. With our invariable superiority of moral strength it is usually unnecessary to trouble about outwitting and outmanœuvring our savage foes. The first object is to get at them by the route most favourable for supply and movement, and to trust to good tactics and hard fighting to do the rest. Moreover, it is difficult to bring strategy into play against enemies who have no vulnerable or vital points, no lines of communication, no capitals, no fortresses, and no bases of operations, and who move with the rapidity of cavalry. Our every-day experience, however, is not without its dangers. Even against savages able strategy, if the theatre of war permits it, may render a tactical success both more decisive and less costly. If the tribesmen can be surprised ; if they can be forced to fight on ground they have not prepared ; if their retreat be cut off ; or if

detached forces, operating in different directions, cause them to disperse their levies, a saving in time, life, and money may result. The Ashantee campaign of 1872, the Chitral campaign of 1895, and Sir Herbert Kitchener's operations on the Nile are cases in point.

Again, the neglect of strategy in one campaign may lead to its neglect in others, perhaps far more serious. The campaigns of Algeria and Mexico, for example, appear to have exercised an evil influence on the French leading. In such irregular fighting there was no need, and possibly no opportunity, of applying the grand principles of generalship, just as there was no need for extended reconnaissance. So the habit was lost; and the disasters of 1870 show what may happen if the experience of savage warfare is held to be a sufficient guide for operations against more formidable foes.

If the writings of the greatest soldiers be examined it will be found that they each and all of them lay even greater stress on the way in which the troops are brought up to the battle-field than on the way in which they are handled afterwards. For one word on tactics the Wellington Despatches contain a hundred on strategy; and, if we may credit Napoleon, the army has much less to do with the issue of the campaign than has the general who directs it. Over and over again he insists upon the predominant influence of the controlling will; and every page of his Correspondence, as every incident of his practice, reveals the vast importance he attributed to "war upon the map." It was on the map rather than on the ground that his most brilliant victories were won. On the battle-field he had only to manoeuvre the superior numbers which his skill had concentrated against a bewildered and half-beaten enemy. There is no need, however, to go to Napoleon to learn the importance of strategy. Our own history supplies us with many striking illustrations. If in the campaigns of the American Revolution the generalship displayed was contemptible, in the great wars with France the leading of our admirals could hardly have been bettered. On her own element England showed a vigour, a wisdom, and an insight which not only found their climax in Rodney, Nelson, and St. Vincent, but which seemed to pervade the whole service. Nor had many years to pass before the errors of the courtier generals in America were more than redeemed by a professional soldier. The Peninsula proved that the fighting brains of England were not monopolised by the Navy, and the defence of Portugal, the construction of the lines of Torres Vedras, the march to Vittoria, the defence of the Pyrenees, and the invasion of France were strategical triumphs of the highest order.¹ Then turn to India. Sound strategy had as much to

¹ The extraordinary foresight and power of organisation displayed by Wellington during the three years he defended Portugal have never, in my opinion, been fully appreciated. Besides constructing the lines of Torres Vedras, he established five sea-bases, one advanced base, and no less than forty magazines of consumption; he organised four lines of water-transport, on the Tagus, the Mondego, the Douro, and the Sado; his land transport was made efficient; roads were improved; bridges and bridge-heads built; and he was fully prepared to act on any one of four different lines, each of them almost entirely distinct. Hence the freedom with which he manoeuvred, and the frequent surprises he brought about. *No theatre of war was ever so thoroughly prepared.*

do with the suppression of the Great Mutiny as hard fighting. While men were stunned and appalled by the suddenness and ferocity of the outbreak, the great proconsul of the North-West was straining every nerve to send troops to Delhi; and to the recognition by Lord Lawrence that the fate of India lay there, and there only, was due in great part the vigour and determination with which the siege was pressed. The influence of the individual, even in a conflict of such extraordinary character, was once more conspicuous; and it was the same a few years later in America. In the War of Secession, where educated soldiers, comparatively speaking, were very few, and the conditions altogether novel, the trained strategist was always the dominant factor. How was it that the South maintained the unequal struggle for four long years? The odds against her were far greater than against France in 1870; and if the American theatre of war was more favourable for defence than the European, the means of organising an adequate defence were almost altogether wanting. But the man was there—or rather the men, for Lee and Stonewall Jackson should never be separated—and the defence became well-nigh impregnable. Overwhelming as was the strength of the Northern armies in Virginia, it was but seldom that their commanders were able to concentrate superior or even equal numbers on the battlefield, except when their *moral* had been so weakened that mere numbers availed nothing.

It was not until the great strategists of the North, Grant and Sherman, were given absolute authority that the situation changed. And I would ask you to note that the Confederate operations up to that time afford an admirable example of how the weaker side may be aided by fine strategy. The attitude adopted can hardly be called "defensive"; in fact "defensive" is a term which, to my mind, is very seldom applicable to either the strategy or the tactics of famous captains. Very rarely indeed do we find the really able general deliberately deciding to await his opponent's attack. He may, for one reason or another—as was Wellington in 1810-12, Napoleon in 1814, Lee in 1862-64—be compelled to surrender the initiative. But at the worst such surrender is only temporary, and often more apparent than real. The enemy is permitted to advance, and pushes forward in the hope of winning a decisive victory; but before he can achieve his end he finds his march embarrassed by topographical obstacles, and he is met when he least expects it by a vigorous counter-stroke. It is the waiting game—the strategy which paves the way for counter-stroke, and counter-stroke in superior force—which enables small armies to conquer great; and the study of this game may be especially recommended to English soldiers. It is often argued that if our two army corps were to take part in a European war they must always expect to be met by superior numbers. This, however, is as much as to say that the strategy which would direct our two army corps would be indifferent, for it is only the unskilful leader who commits his troops to battle with the odds against him.

To disturb old and proud traditions is an unpleasing but not always an unprofitable task. The ordinary Englishman derives much comfort from

the idea that the victories of the Peninsula were won against overwhelming masses; the people of the Southern States still glory in the idea that Lee won their battles with a relatively small army; and there is hardly a Virginian who does not believe that Stonewall Jackson was invariably outnumbered when he overthrew the Federals. That there is some excuse for these pious opinions is beyond all doubt. The three great Anglo-Saxon generals were always inferior on the theatre of war; but on the field of battle they invariably fought on at least equal terms. And they made the terms equal not so much by selecting strong positions, by digging trenches, and by sound tactics, but by compelling their enemies to divide their forces, by luring them into carefully-laid traps, by meeting them in detail, and by surprising them. Most generals on the defensive are content if they can protect themselves against surprise; it was under such conditions that Wellington, Lee, and Jackson so often surprised others.

I must here introduce a word of explanation. I have said that Wellington and Lee only fought when the terms were at least equal; that is, they generally managed to decline battle until they had concentrated an equal if not superior force; and this statement may be traversed by the objection that in many of their battles they were certainly outnumbered. But, as you, Sir, have said in your *Essay on War*, "the strength of armies cannot be measured by counting heads." Strength is not merely a question of numbers, but of *moral*, that force which is to the physical as three to one. An army that has won a decisive victory gains far more than the mere effacement of so many of the enemy's troops. After such a conflict the fighting value of each individual soldier on the winning side is largely increased, on the defeated side proportionately depreciated. First blood is an all-important factor, and the army which wins the first battle, if its victory be complete, may thenceforward encounter superior numbers without fear of the result. Moral superiority, self-confidence, and mutual confidence, are a more than sufficient compensation for the lack of material strength. But in the first engagement the concentration of superior numbers, in civilised warfare, is almost invariably essential to success, and the true test of a great general is his power of bringing about this desirable consummation. So Wellington in the Peninsula, although his army was but a handful compared with the hosts of the invader, inspired his own troops, and demoralised those of the enemy by his successive victories at the outset. Roliça, Vimiero, and the Douro, won by superior numbers, paved the way for still greater victories, where the balance of physical strength inclined against him. So, too, Lee, in 1862, although he had at the theatre of war but 86,000 men against 200,000, concentrated the heavier force on the field of Gaines' Mill, the first great battle, and thereby won such a measure of moral superiority as enabled him to dispense with superior numbers during the remainder of the campaign.

I make no excuse for dwelling so long upon this point. It is exceedingly important that British officers should remember, first, that even the smaller army, if it is well led, need not despair of being the stronger at the decisive point; and, secondly, that the

soldiers we have the honour to command, unyielding as they are, are still susceptible to the influences of victory and defeat. Was the spirit of the troops the same after Isandlhana as when they crossed the frontier? Was there the same confidence displayed on Majuba Mountain as before Bronker's Spruit and Laing's Nek? Was the garrison of Candahar after Maiwand as thoroughly to be depended on as the men who marched to its relief? No; even with British soldiers we must begin with Vimiero and the Douro if we would end with Salamanca and Waterloo. In the first battles, numerical preponderance is essential to success. What says Napier, not only the greatest of military writers, but the most profound of military thinkers? "How often have we not heard the genius of Buonaparte slighted, and his victories talked of as destitute of merit, because at the point of attack he was superior in number to his enemies! This very fact, which has so often been converted into a sort of reproach, constitutes his greatest and truest praise. . . . He so directed his attack as at once to divide ~~his~~ enemy, and to fall with the mass of his own forces upon a point where their division, or the distribution of their troops, left them unable to resist him. It is not in man to defeat armies by the breath of his mouth; nor was Buonaparte commissioned, like Gideon, to confound and destroy a host with 300 men. He knew that everything depended ultimately upon physical superiority; and his genius was shown in this, that, *although outnumbered on the whole, he was always superior to his enemies at the decisive point.*"

III.

I must once more guard myself against all chance of misapprehension. I have laid much stress on the waiting game, on compelling the enemy to divide, and declining battle until the chances are favourable. It is probable, however, that there may be some here who have in their minds a particular strategical situation to which neither the examples I have quoted nor the principles I have mentioned would in the least apply. I admit the objection. First: it is very seldom indeed that historical precedents can be found to suit every, or even any, particular situation. Second: the principles of strategy, like those of tactics, are not of constant value. They are not to be blindly followed. At times more may be achieved by disregarding them than by adhering to them. For example, there is no principle on which Napoleon lays greater stress than on concentrating out of reach of the enemy. Von Moltke, on the other hand, tells us that to unite two previously separated armies on the field of battle is the most brilliant and decisive of military operations. And it will be found that many great victories have been won in defiance of Napoleon's ruling. Austerlitz, Bautzen, Vittoria, Waterloo, Königgrätz, are instances which will at once be recalled; and in the campaigns in Virginia Lee performed this feat on almost every occasion that he defeated the Northern generals. The truth is that principles are always conflicting; and the great art of the strategist consists in adjusting their rival claims, and in recognising when they may be broken with impunity. Let him learn that the so-called rules of war are merely danger-signals, warning

him of the risks he may incur if he disregard them, and he has learnt a most useful lesson.

Again, besides the principles of warfare, which to a certain extent are mechanical, dealing with the manipulation of armed bodies, there is the spirit of warfare. Success depends more on energy, on activity, on foresight, on vigilance, and on patience, than on obedience to precept or adherence to precedent ; and these qualities are applicable on any theatre whatsoever. Moral means—surprise, mystery, stratagem—are weapons which may be used as effectively in the defence of London as in the advance on Khartoum. Even if the British Army were compelled to concentrate for the defence of the metropolis there would be no necessity to surrender the initiative ; no reason that our leaders should not seek to bewilder, to mystify, and surprise the invader ; no reason that they should not seize, and even create, opportunities of dealing with him in detail. To passively await attack in a prepared position, even with the view of counter-stroke, would be feeble strategy indeed. Think for a moment what we should renounce if the whole army was kept idle behind earthworks until the attack developed. We should renounce all chance of taking advantage of the enemy's mistakes ; we should allow him to select the time, the direction, and the place for his decisive effort—the psychological moment and the vulnerable point ; we should give him the opportunity of manoeuvring, of changing his base and line of operations, of bewildering us with feints, of harassing our troops, and of mystifying our generals ; we should leave him perfectly free to frame his plans and move his masses ; and, lastly, his mental equilibrium would be undisturbed, and the mental equilibrium of the opposing general is not the least important factor in war. But if our warfare were urged in the right spirit, if the weapons of the strategist as well as of the tactician were skilfully employed, if the moral influences were appreciated at their right value, the invader, like Napoleon at Waterloo, might be lured to his destruction. Hear the words of a general who, with an army that never exceeded 17,000 men, won five victories in succession, and paralysed for the time being a host more than tenfold his strength :—“There are two things,” said Stonewall Jackson, “never to be lost sight of by a military commander. Always mystify, mislead, and surprise the enemy, if possible, and when you strike and overcome him, never give up the pursuit so long as your men have strength to follow ; for an army routed, if hotly pursued, becomes panic-stricken, and can then be defeated by half their number. The other rule is never to fight against heavy odds, if by any possible manoeuvring you can hurl your force on only a part, and that the weakest part, of your enemy and crush it The business of the soldier is to fight. Armies are not called out to dig trenches, to throw up earthworks, to live in camps, but to find the enemy and strike him, and do him all the possible damage in the shortest possible time. To move swiftly, strike vigorously, and secure all the fruits of victory is the secret of successful war.” Again, at the beginning of 1863, just before his untimely death at Chancellorsville, he said :—“We must make this campaign an exceedingly active one. Only thus can a weaker country

cope with a stronger; it must make up in activity what it lacks in strength. A defensive campaign can only be made successful by taking the offensive at the proper time. Napoleon never waited for his adversary to become fully prepared, but struck him the first blow."

Once more I must be careful. I would not have it thought that Stonewall Jackson advocated a wasteful and reckless offensive. With all his extraordinary enterprise, there never was a more prudent and cool-headed leader. Moreover, an active strategy, meaning thereby the strategy which is always prepared for counter-stroke, and which never misses an opportunity, does not necessarily imply offensive tactics. There are, undoubtedly, great moral advantages on the side of the assailant. But attack is not always the better policy; although, if it be well-timed, it is not necessarily the more costly. I do not, for instance, altogether agree with those who hold that an English army is bound to the defensive because it cannot afford to lose men. In the first place, our reserves, in proportion to the fighting force, are as large as those of any other Power. In the second place, suppose that we had 20,000 men, and our adversary 30,000. If we could concentrate our whole force against three detachments, each 10,000 strong, in succession, we should probably lose fewer men than if we were to defend a position against 30,000; and while success in the one case would be certain, in the other it would be problematical. But our adversary may not be so confiding as to split up his army into fractions; and in such conditions, or even when numbers are nearly equal, the defensive, *ceteris paribus*, is often the safer course. Again, it may be sometimes possible to induce an inferior adversary to attack us in position, as Wellington induced Napoleon to attack him at Waterloo. As a rule, however, if the enemy is divided he must be attacked, and attacked speedily; for if he be allowed to escape, he will most certainly concentrate.

IV.

I trust it will not be thought that in exalting the spirit of war I am decrying the importance of ground and the value of field entrenchments. Few and far between as have been the occasions on which an English army has found itself bound to the defensive, no student of our military history can forget Torres Vedras and Waterloo, nor any American Fredericksburg, Gettysburg, and Cold Harbour. But the student of strategy should understand the relative value of the processes of war, and defensive positions, or, as I would rather call them, positions in readiness for counter-attack, are not of the paramount importance which is often ascribed to them. It is undoubtedly a very great advantage indeed if the battle-ground be favourable; yet, as a general rule, it is strategical and not tactical considerations which dictate the position, and the tactician's business is to make the best use of the ground on which he finds himself. For example, in the campaign of 1815, Wellington's choice of a position at Waterloo was not based upon the fact that the ridge north of La Belle Alliance was strong for defence, but on the fact that it covered the Wavre road, by which the Prussians could most readily join him, and also the two roads by which Napoleon would most probably attack him. That he put

the natural features to the best use goes without saying; but it was the consummate strategy of the allies, and not the strength of the position, which was the decisive factor in the fight.

It is true that Napoleon has said "War is a business of positions"; but even a small knowledge of his campaigns makes it perfectly clear that it was strategical and not tactical positions to which he alluded. And it is well to bear this in mind. Strong tactical positions have often proved a snare as deadly as historic fortresses. The French, in the Metz campaign, suffered as much from the one as from the other. Wörth, Colombey, and Gravelotte were tactically so strong that their attractions were irresistible. Not only the marshals but their subordinates succumbed to their fatal influence. They could not bring themselves to abandon ground which offered so many advantages. Strategical considerations were disregarded; superior force was thought unnecessary, and punishment followed with unerring steps. Napoleon, when he made use of the phrase which I have quoted, knew that there are few positions which cannot be turned, few entrenched camps which cannot be avoided. Military history teaches us that strong and prepared positions, even Waterloo itself, owe their reputation more to the blunders of the assailant than to their own virtues.

But to rely on the blunders of our enemies is to trust too much to fortune. We cannot expect that they will run their heads against our front with the same reckless impetuosity as Masséna at Busaco, the Russians at Plevna, Burnside at Fredericksburg, or Grant at Cold Harbour. We must expect from the outset the skilful manœuvres which eventually made those positions untenable. And to meet those manœuvres we must rely, in the first instance, on carefully-selected strategical positions, on positions like Waterloo, where concentration of superior force is certain, where a decisive counter-stroke is practicable, where manœuvre can be met by manœuvre, where our own lines of communication are well protected, whence those of the enemy can be effectively assailed. If these requirements are not fulfilled, the position is indifferent; and it is for this reason that the location of halting-places, of camps and bivouacs, is of such immense importance. A few miles one way or another may make all the difference. For example, in the recent operations in the Soudan, Mahmoud, advancing on Berber, leaves the Nile and takes post on the Atbara. The Sirdar responds by moving out a few miles towards the river mouth, and the Mahdist general is completely checkmated; he can move neither back nor forward. And here the training of peace may have a prejudicial effect. In peace, the health and comfort of the troops are the first consideration; in war, everything must give way to strategy. If the fields of Colombey, Vionville, and Gravelotte were proposed for autumn manœuvres on a large scale, the proposal would certainly be rejected. The field of Waterloo could be set aside for the same reason, *i.e.*, that the streams and wells would not supply a single army corps. Yet on the arid plains round Metz, 350,000 men and 80,000 horses bivouacked and fought for many days, and over 50,000 wounded called in vain for the water it was impossible to provide for them.

To show the importance of location, we may take the operations in Belgium in 1815. When Napoleon concentrated so suddenly on the frontier, the allied armies, under no apprehension of being immediately attacked, were dispersed over a front of ninety miles. What was the result? Blücher, concentrating at Sombreff, had to fight at Ligny without the aid of his Fourth Army Corps; while Wellington was placed in a situation even more uncomfortable. When the news came that the French were advancing the Duke's troops were so disposed that concentration, at a suitable point, was exceedingly difficult. If Napoleon took the Mons-Hal road, as the Duke had much reason to fear, the Anglo-Dutch army might be caught in the process of concentration, unless indeed it concentrated to the rear, and then, if the French advance proved to be only a feint, the Prussians would be left isolated; if Napoleon took the Charleroi-Sombreff road, and held Quatre Bras, or even threatened it, with a strong detachment, it would be impossible for the Anglo-Dutch to give direct aid to the Prussians or strike Napoleon in flank. In consequence of this dispersion Ligny was lost. The French advanced so suddenly that concentration was impossible. "Napoleon," said Wellington to the Duke of Richmond, "has humbugged me," and the campaign was begun under most inauspicious circumstances. Yet many eminent critics have shown us how the cantonments of the two armies might have been arranged so as to provide for all emergencies. Had even the First and Third British Divisions been concentrated at Brain le Comte instead of extending as far as Enghien, nine miles north-west, and the Fifth Division been placed at Waterloo instead of at Brussels, twelve miles north, a strong force might have been concentrated at Quatre Bras early on June 16th, and Ney have been unable to protect Napoleon's flank. On the value of *time* in war it is needless to enlarge; but *place* and *distance* are equally important; and if time, according to Napoleon, is counted by minutes, distance is measured by furlongs.

V.

"Strategy," says Napier, "is the most important and difficult part of a general's duty," and it would seem, therefore, that a study of its principles is absolutely essential. The opinion, however, is not uncommon that the only thing necessary for its application is common sense, or rather of military common sense, *i.e.*, the common sense of a soldier who has practical knowledge, if not of war, at least of the mechanism of war, and above all, of the main factor in all military questions, whether of strategy, tactics, or organisation, the men in the ranks. And no doubt, to a certain extent, this is perfectly true. The very ablest statesmen have failed most egregiously as strategists, not so much from want of knowledge of principles, but from want of that knowledge which is common to almost all who have long breathed the military atmosphere. The man who has been a week on short rations, or forty-eight hours without rations at all, knows more of the real nature of war than Jomini and Clausewitz could teach him. But actual experience and practical knowledge are not sufficient to make a strategist, any more than pure theory. In the first place, all experience

is limited, and can only be made comprehensive by drawing on the experience of others; in the second place, no great soldier has neglected theoretical study; in the third place, many experienced generals, although, like Ney and Blücher, most able tacticians, have been indifferent strategists; and, lastly, the common sense which is untrained, which is unaccustomed to consider the problems presented to the commander in the field, is common sense at a very serious disadvantage.

Admitting, however, that strategy must be studied, it is not easy to say how and by whom it should be studied. To take the last point first. It has been asserted that for a hundred who find a knowledge of tactics necessary, there is but one who need trouble himself about strategy. I cannot think that this observation is altogether sound. The grand operations of a campaign are undoubtedly directed by the few, the minor by the many; but it is very difficult to predict that an officer will not one day find himself amongst the few, especially in our own Army. Our wars are different to those of other nations. One great campaign every thirty or forty years is not what we have to prepare for, but a small campaign, perhaps two or three small campaigns, every twelve months; and in these small campaigns, carried out in uncivilised countries, under very great difficulties, by officers of comparatively humble rank, strategy plays, or should play, a leading part. Again, as I have already suggested, the defence of our inland frontiers, in very many cases, is perforce confided to a large number of officers, who, if they have not actually to lead the troops, have to collect in time of peace the information—topographical, political, and military—on which, in war, the general must base his plans. It is almost unnecessary to say that the character and value of such information must depend very greatly on the strategical acumen of those who collect it. Lastly, there is the work of the cavalry. Their responsibilities as regards information are even greater than those of officers reconnoitring the theatre of war. It was said by Stonewall Jackson of a great cavalry soldier, who was killed while serving under his command, that "his sagacity was almost intuitive in divining the purposes and movements of the enemy"; and this exceedingly useful quality must have been based, to a great extent, on a knowledge of strategy. Without such knowledge a cavalry officer would probably miss altogether the significance of certain movements; he would leave unobserved the most important points, send his patrols in the wrong directions, and in reporting on the country omit all reference to the features of strategical moment.

There are many of you, I have no doubt, who are acquainted with that most practical of books on cavalry, Colonel Tomkinson's *Diary in the Peninsular War*. The writer was nineteen years of age when he first saw active service in 1809, and he remained in the field, with hardly a break, up to the occupation of Paris in 1815. His knowledge of strategy was undoubtedly drawn from his experience, supplemented, in all probability, by discussion of the events before him with men of larger acquirements than his own; but I am sure that those who have read his roughly-written notes have been struck by the breadth of view therein displayed, and, at

the same time, have recognised what an admirable reconnoitring officer this young subaltern must have been. If Wellington had many like him, and I believe myself he had, he owed far more to his cavalry than is generally suspected.

But in default of actual experience on such a theatre as the Peninsula, and of the object-lessons which it affords, how is the art of strategy to be mastered? Military history certainly furnishes us with examples of strategical problems and their solution. But historians are seldom concerned with analysing the process of solution; they do not give the exact *data*; and they assume that the reader has a thorough comprehension of principles. In a word, they write for experts and not for tyros. To my mind the first need of the student is an elementary treatise; an explanation of how "war on the map" is made, at what the strategist should aim, and by what means he may attain his end. At the present moment, with the single exception, Sir, of your own remarks on strategy in your *Essay on War*, I am not aware that such a guide exists. Hamley is certainly a great book. For generals and staff officers, dealing with the defence of frontiers and the choice of lines of operations, it is invaluable. But as a practical guide to strategy in the field it is not entirely satisfactory. It is an aid to study, not to practice. In the description of campaigns the keynote, that is, the aim of the commander, seems often wanting; and the real objective of the operations is obscured by the number of side-issues. Thus the student, unless he has been assisted by an experienced instructor, closes the book with his head full of manœuvres and combinations and not much else. He has read a great deal about rectangular bases, re-entering frontiers, parallel and transverse obstacles, but he has heard little of great principles; and if he is set to solve a strategical problem he finds that he has no clear idea of what to do or how to do it. I do not for a moment say that such points as the objective, as the action of a defending army, as the importance of concentration, are not alluded to in Hamley, but they are not to my mind made sufficiently impressive. Again, Hamley deliberately omitted all reference to the spirit of war, to moral influences, to the effect of rapidity, of surprise, and secrecy; and, as I have already said, these, and ~~not~~ mere manœuvres, are the best weapons of the strategist. It is possible, however, to rectify these deficiencies. A statement, compiled, Sir, in great part from the *Essay on War*, which appears as an appendix to the lecture, may perhaps go some way towards it. I am well aware that this statement is capable of improvement. Many of its clauses require much explanation, and each paragraph would furnish a text for half-a-dozen lectures. But, at the same time, I have good reason to believe that while making military history more intelligible, and Hamley more useful, it will simplify the study and assist the practice of strategy. It will not, however, make that study less laborious. A list of principles, unaccompanied by examples, is not in itself of much value. To have such by heart would be of little service to a general in the field. Unless he had witnessed, or had read and analysed, the way in which the principles laid down have been actually applied, it would profit

him not at all. To grasp the full significance of these principles, it is essential that he should have reflected on several examples, drawn either from his own experience or from the experience of others, of their successful application. And he should have done even more than this. It is only when principles have become so impressed on the mind as to present themselves instinctively for consideration wherever a situation is dealt with, that a knowledge of them is of real and abiding value.

But such impression is not easily made. Will reading make it? Hardly. The printed page seldom leaves more than a superficial mark. Will experience make it? Possibly, but by no means certainly. No; the same method must be adopted in teaching strategy as in teaching tactics. Knowledge can only be made instinctive by practice, by constant practice, and by practice only.

To be really useful this practice must rest on a certain amount of knowledge. Principles must be mastered, and examples analysed, or at least there must be some experience of war. But this last, as I have more than once suggested, is seldom sufficient; and how the preliminary preparation is to be carried out is a difficult question. We can hardly establish schools for strategy, or add a new subject to an already bloated system of examinations. We know that the time of our officers is very fully occupied, and that over-much sedentary work is the very worst training for service in the field.

So we must trust, I think, in the main, to individual zeal, to ambition, to the object-lessons which contemporary campaigns present, and to the desire for knowledge which is growing every day. I believe, however, that much more might be done in the way of making young officers familiar with the grand operations of war. I do not for a moment suggest that we can make every cadet a strategist; but we can at least give them a grounding which will form a substantial basis for future study. Military history, I am aware, is much out of favour. At one time "Napier's Peninsular War" was taken up by candidates for commissions; Wellington's campaigns were very thoroughly studied and ably taught at Sandhurst; and in the examination for entrance to the Staff College the historical papers were marked as highly as any other. But times have changed. Our future Wellingtons know much of the Wars of the Roses, but nothing of Waterloo. At the Royal Military College a few lectures, concerned principally with the tactics of a single campaign, are the extent of the teaching; and the candidates for the Staff College are deterred by the small number of marks allotted to strategy from devoting much time to this important subject. Why the history of the Peninsular campaign should have been discarded in favour of the history of the Middle Ages I utterly fail to understand. Are politics, government, the growth of laws and nations, sciences more simple than the art of war? Are cadets incapable of comprehending the operations which, a few years later, if they join the Staff College, they are called upon to study and to criticise? Is the experience and knowledge of eighteen so much inferior to the experience and knowledge of four-and-twenty? Is, lastly,

an acquaintance with the binomial theorem more important to a staff officer than a good grasp of strategic principles? Such, however, are the ideas that have come down to us, and we have to make the best of them.

I would advise those who would prepare for the practice of which I am about to speak, to make themselves familiar with two phases of warfare; first, the mechanical process by which the troops are supplied and moved; second, the methods by which a general obtains information. A knowledge of what goes on *behind* the army is essential to the practice of strategy; and of little less importance is a knowledge of the means and of the difficulty of obtaining accurate and timely intelligence. Let an officer realise that the existence of an army as a fighting force is bound up with the security of its bases, its magazines, and its lines of supply; let him realise how slow and exhausting, even with the best arrangements, are the movements of large bodies, how great the privation of the men, how absorbing the pre-occupation of the generals; let him realise what is meant by the pregnant phrase "the fog of war"; let him learn the difference between the real and the theoretical, between manœuvres where everybody knows everything and war where nobody knows anything; let him understand that the commanders walk in such darkness that they are always susceptible to mystification and misleading; and then, and not till then, he will be fitted to deal with strategical problems.

I use the word "problem" advisedly, for the practice I advocate, and the only practice possible, is the working out in peace, either when studying campaigns, at war-games, at staff rides, instructional tours, or manœuvres, of the various strategical problems which present themselves. It is no new method. Most of you are aware that it has long been followed in Germany, and that at the Kriegsakademie von Moltke himself, during his long tenure of office as Chief of the Staff, set and criticised the problems to be solved by the students. You know, too, that so essential is the practice rated in Germany, which indeed owes much to her strategists, that the best students at the Kriegsakademie, after their course is finished, spend a whole year solving problems under the direct supervision of the higher authorities. In America the Naval War College pursues the same system of instruction as its great prototype in Berlin; and not long ago, when visiting that institution, I found the officers working out an imaginary campaign in those very waters where they are to-day putting theory into practice. Our own Staff College is not behind the times, the best of the papers being read by the Commander-in-Chief; and almost within the last few months, at the various staff rides in which so many regimental officers have been engaged, the opportunities for strategical instruction have not been allowed to slip.

On the benefit of this method it is hardly necessary to enlarge. "War on the map," unlike tactics, can be practised in peace under almost exactly the same conditions as in war; and the experience gained at the war-game, and more especially at staff rides and manœuvres, must therefore be of the greatest value on active service. The officer accustomed,

under competent criticism, to the solution of problems has the great advantage that he knows how to set about his task, and will thus lose no time. He recognises at once what it is essential to consider and what may be disregarded; he goes straight to the point to which his attention should be directed; he misses none of the many factors to be considered; he has learned how to reconcile their conflicting claims; he has the great principles in mind; and last, but not least, he has acquired the power of thinking thoroughly, of stating his views clearly, and of coming to a definite decision.

As regards the actual procedure to be followed I have little to say. At war-games and staff rides several officers, in addition to those commanding the sides, should be told off to write what are called "appreciations of the situation." The term, borrowed from the German, was inspired by von Moltke's maxim, "The essential thing in war is on every occasion to appreciate the situation rightly, and to make the arrangements best suited to it"; and it has been defined by Sir Redvers Buller as "a military review of the actual situation, culminating in a statement of the measures recommended to meet it." These "appreciations" should be criticised and discussed by the director or chief umpire; and whether they are sound or otherwise, whether any of the factors have been overlooked, or any precautions neglected, will generally appear in the course of the operations. I may add that it has been found not only practicable but useful at autumn manoeuvres to ask staff officers to write short proposals for action; and a form which appears in the appendix may serve as a rough guide for first attempts at "appreciations."

Another very useful strategical exercise is the deduction of inferences. I have already spoken of "the fog of war," and I may remind you that a commander in war bases his action, not so much on the intelligence he receives from his scouts and spies, as on the inferences he draws from the reported movements and condition of the enemy. In fact, "the fog of war," even in the most favourable circumstances, is so dense as to compel him to act on "probabilities." The wider his knowledge of war in general, of strategy in particular, and of human nature as affected by war, and the acuter the penetration acquired by constant practice, the nearer to the truth will be his deductions. He will naturally have forecast, so far as possible, every movement that the enemy may undertake against him, and will have prepared, in his own mind, the orders applicable to each; but it is his skill in interpreting trivial indications that will secure the time needed for their issue and execution. Of what practice can do in this respect I have constant evidence at the Staff College. Not only are the situations at war-games and staff rides there dealt with, but those presented by campaigns which are actually being fought out beyond the seas; and although the intelligence, gathered for the most part from the daily press, is usually exceedingly scanty, in very many cases the predictions have proved remarkably accurate.

There is but one more point to which I would allude. Let no soldier run away with the idea that strategy is a pedantic and inglorious

art, calling for nothing more than hard thinking, careful calculation, maps, compasses, and the power of the pen. It is no bookworm's business. "It is in strategy," says Napier, "that the great qualities with which a general may be endowed will have ample room to display themselves; fine perception, unerring judgement, rapid decision, and unwearyed activity both of mind and body, are here all requisite." Courage, the soldier's virtue, is as essential to the practical strategist as to the practical tactician. "He needs," writes Prince Kraft, "a special qualification which the theorist can dispense with, viz., strength of mind, which, undeterred by the knowledge that the lives of thousands depend on his decisions, will enable him clearly to decide what to do in the midst of disturbing elements. . . . Every war will still be a matter of venture. The strategist must therefore renounce all hope of being absolutely certain of the result. He who is not prepared for risks will win no great success, and as in war they must be run, he had better not meddle with it. When to dare and what to dare is the question for consideration. His attention must not be directed to one point only, but all eventualities must be thought over. Nothing, even the most extraordinary action of the enemy, must surprise the strategist. He must be prepared for everything by previous reflection, and be ready at once with the proper reply. All these things require gifts given to but few men, a comprehensive mind and a strong will."

APPENDIX I.

Strategical Procedure.

- A. The object of the strategist is to concentrate superior force on the field of battle.
- B. This object is attained by fighting the enemy in detail.
- C. The main objective is the enemy's army, but the preliminary objectives may be his isolated detachments, or the strategical points which he is compelled to protect.
- D. To fight the enemy in detail he must be either:—
 - 1. Encountered before he can concentrate. [1796, 1805, 1809 (Portugal), 1813 (Spain), 1815, 1862 (Virginia), 1866, 1870.]
 - 2. Induced to divide after concentration. [1814, 1862, 1877.]

(1.) To encounter an enemy before he can concentrate, the means are:—
 More rapid mobilisation. [1866, 1870.]
 Surprise; effected by activity, secrecy, feints, and an unexpected line of operation.

(2.) To induce an enemy to remain divided until the blow is prepared, the means are:—
 The skilful use of detached forces, threatening his line of communications or some vital point.
 Concealment, begetting uncertainty and apprehension.
 Spreading false reports.
 [1796, 1805, 1812 (Portugal and Spain), 1813 (Spain), 1814, 1862, 1870.]

(3.) To induce an enemy to divide after concentration, the means are :—

Those employed in the previous case.

Drawing him forward into a "zone of manœuvre" where topographical obstacles will embarrass him. [1810 (Torres Vedras), 1814, 1862.]

E. Superior force need not necessarily be physical force. Moral force is a more important factor; and whether the physical superiority is there or not, moral superiority should always be secured at the decisive point.

This may be effected by :—

1. First blood.

2. Upsetting the moral equilibrium of the enemy's commander.

3. Destroying the confidence of his troops.

4. Forcing him to fight at a disadvantage—

(a) On ground which he has not prepared, with which he is unfamiliar, which he has to occupy in haste and confusion, where the topography is against him, and where defeat spells disaster.

(b) On ground where he is so situated as regards his communications that he will only think of preserving himself from defeat, and not of delivering a counter-stroke.

5. By striking him unexpectedly from two different directions.

[Ulm, Vittoria, Bautzen, Gaines' Mill, Second Manassas, Königgrätz, Vionville.]

The means to be employed are :—

For 2. Keeping him in uncertainty; crushing his detachments; threatening or cutting his line of supply; preventing him from communicating with other bodies of troops; bewildering him by feints; mystifying and misleading him. [The Valley Campaign, 1862.]

For 3. Crushing detachments; cutting off supplies; inducing the general to give counter-orders, to change his plans, and to make useless marches.

Declining battle until the propitious moment.

For 4. Manœuvring against the line of supply or a vital point. Changing the base, and adopting a new and unexpected line of operations.

Concealment.

Hard marching and vigorous attack.

F. On the defensive the concentration of superior force on the battlefield may be prepared for by :—

1. Concealing the point of concentration and the disposition of the troops.

2. Selecting of a favourable "zone of manœuvre."

3. Establishing alternative bases and lines of supply.
4. The use of detached forces, as in D (2).
5. Spreading false information.
6. Luring the enemy into a trap by an apparent dispersion of the defending forces. [Austerlitz, Busaco, Waterloo, Second Manassas, Fredericksburg.]
7. Feigned retreat, inducing the enemy to make mistakes. [Salamanca.]

APPENDIX II.

Appreciation of a Situation.

"What is wanted is a military review of the actual situation, culminating in a statement of the measures recommended to meet it."—*Sir Redvers Buller.*

A. A clear and concise statement of:—

1. Position of our own forces. Position of enemy's forces, so far as known.
2. Object we have in view, with reasons for and against
3. Factors which affect the attainment of this object, which *may* include some of the following :—
 Politics and finance.
 Relative numbers and armament.
 Vulnerable points.
Moral.
 Topography and roads.
 Communications.
 Supply and transport.
 Weather.
 Time and space.
 Character of opponent.
 Apparent object of enemy.

Note 1. The position, object, strength, and *moral* of the enemy, as well as the character of his generals, have generally to be inferred from what has already happened. We must act on probabilities, for we cannot have certainties.

Note 2. It is better to consider first how to attain our own object, and not merely to prevent the enemy attaining his. To do the latter is to surrender the initiative.

B. A definite proposal for the attainment of our object :—

Note 1. The enemy's vulnerable points often give clue to the soundest manoeuvre.

Note 2. A *practical* proposal, and not a general idea, is what is wanted. The distribution of troops should be given in detail, the lines of march, and, *if necessary*, the methods of supply.

Note 3. The following rules are useful :—

- C. centration of superior force, moral and physical, at the decisive point is the grand rule of war.
- Implicity is better than ingenuity.
- Complicated operations are very dangerous.
- Reduce detachments to a minimum; but detached forces are always necessary for feints and secondary attacks.
- Try to realise the situation from the enemy's point of view.
- Always endeavour to mystify and mislead.
- Surprise is the greatest of all foes.
- Omit no precaution to conceal your own dispositions.
- Attack when and where you are least expected.
- If you can upset the mental equilibrium of the enemy's general, you reduce the strength of his army by 75 per cent.
- The exterior lines are more dangerous than the interior.
- More than one line of operation is dangerous.
- Possession of the interior lines, if you have not time and space to manœuvre, may end in your being crushed.
- The force which first threatens the enemy's communications compels the enemy to conform to its movements.
- If you have made proper arrangements it is probable that the enemy knows no more about you than you know about him.
- Never allow your cavalry to get so far away that it cannot be present on the battle-field.
- There can be no certainty in war, but you must make as certain as possible that you can supply your men.
- Never take counsel of your fears. If the chances are in your favour, you must risk something.
- Remember that the enemy is just as frightened of you as you of him.
- Do not refuse a line of operations because it is difficult or risky. Its difficulty and risk may cause the enemy to relax his vigilance.
- C. (*Not always necessary.*) A statement of the counter-maneuvres open to the enemy, and a refutation of the objections which may be raised against your proposed course of action.

Observations.

1. The report will be clearer if the several statements are given in tabular form, lettered and numbered.
2. Officers will decide for themselves, when discussing a situation, what portions of the above may be disregarded. The form is intended to serve only as a general guide.
3. Solutions of problems worked out thus are of great value. They may not often be required, in the shape of a written report, on service; but they create the habit of considering situations in logical form, of grasping all factors, of coming to definite conclusions, and of putting yourself in your enemy's place.

4. Papers of this kind are by no means rare in military literature. Wellington's Despatches, Napoleon's Correspondence, and the Official Records of the American Civil War, contain numberless examples, written in the field. Von Moltke's project for the invasion of France, dated two years before 1870, and given in Section I. of the German Official Account, is an admirable model ; and his "appreciations" in 1866 have been translated in the R.U.S.I. JOURNAL by Mr. Spenser Wilkinson. Consult also the official history of 1882, and of the Nile Campaign, 1884-5.

Captain W. JAMES (late R.E.):—I am sure we have all listened to Colonel Henderson's lecture with the greatest pleasure. I am very glad to see that at the beginning of his lecture he has attacked my old friend the statesman. The statesman has a great deal to answer for, more perhaps in England than in any other country ; because, I suppose that in no other country which is called civilised have statesmen been so absolutely, so entirely, so grossly ignorant of the art of war as they are in this unfortunate land. The lessons which they ought to have learned times out of mind, but which they never appear to have appreciated yet, are the impossibility of improvising forces at the beginning of a war, the absolute necessity for rapid mobilisation, and the absolute need for accurate information. Frederick the Great said when he was fighting Marshal Soubise (a gentleman whose fame is chiefly connected with the sauce which bears his name), that he had twenty-five cooks and one spy ; whereas he, Frederick, had twenty-five spies and one cook. I do not know exactly the amount of secret-service money that is expended in this country, but I would venture to say that it is far less than that expended on spies in any other country of Europe. I am convinced that unless we do spend money in that direction we shall find ourselves at the outbreak of any war not exactly in the position we ought to occupy, because the fog of war will throw a dense cloud around us, and we shall fail for want of that information with regard to the enemy's forces and distribution, and plan of action, which is an absolute necessity for the proper arrangement of our forces when the war commences. Probably the best example of what I have said, with regard to statesmen, is to be derived from the war of the American Rebellion. That war, I do not hesitate to say, came to an unfavourable conclusion principally because our statesmen were absolutely ignorant of how to carry on war. I am quite prepared to admit that the tools with which it was conducted were not up to what was required of them, that our generals did not display any great military knowledge in conducting the operations ; but a tolerably intimate study of that particular war leads me to believe that, bad as the English generals were, they were made worse by the wrong direction which was insisted upon by the statesmen who were supposed to rule and govern our military operations in those days. Now, in foreign countries you must remember that the principle of *Silent leges inter arma* has always obtained ; and you will find that when France or Germany, or any of the great countries of Europe are concerned, it is the soldiers who direct the actual operations of war. It is not the same with the Anglo-Saxon races—it is not the same in England, and it is not the same in the United States. It appears to me that we are getting a most patent example of that when we find an excellent politician of the name of Bryan appointed to command a regiment. Poor man ; he is as ignorant of war as it is possible for anybody to be, and that is saying a great deal. We see politics ruling in the United States just as they ruled in the time of the Secession. Just as Benjamin and Staunton did their best to ruin their respective sides, so the politicians of the United States at the present moment are doing their best, by placing incompetent men in office, to ruin their operations. Possibly the day may come when they may see the folly of this. But in England I never feel sure that we have emerged from what I may call the Pitt-Aberdeen state of existence. Mr. Pitt the younger was an excellent statesman in many

ways, and a man of high aspirations and ideals ; but he was not a war minister, and I do not think it is disrespectful to say that the late Lord Aberdeen also was not a war minister. Pitt frittered our forces away all over the surface of the globe at the beginning of this century, and Lord Aberdeen did not understand that when you go to war the sooner you hit hard the better. The necessity for numbers, on which the lecturer has laid so much stress, at the outbreak of a war is, of course, again a matter for the statesman to decide. Whatever may be the opinion of the soldier as to their necessity, if the statesman is not prepared to furnish the soldier with those numbers, he will have to do his best with the few that are given him. One remark I wish to make is on Napoleon's view about having a single line of operations. I have often thought—and I think you will probably agree with me—that this was due entirely to the fact that he wrote his dictum on this point at St. Helena after the Waterloo campaign. He had been considerably thrashed by the dual line of operations of the Anglo-Belgian army and the Prussians, and he always tried to belittle their operations ; in fact, he endeavoured to prove at St. Helena that he ought to have won ; that so far as the actual manoeuvres were concerned he had done a great deal better than his opponents had. Of course, we know what the actual result was. It is remarkable that he should have done it, because we know that in 1813, at the battle of Bautzen, he used exactly the same idea as he deprecated with regard to Blücher and Wellington. Secondly, I would draw your attention to the fact that with modern large armies, with the enormous forces that are now dealt with in the theatre of war, a single line of operations is absolutely impossible. You cannot manoeuvre 600,000 men along one road. Even in 1812, when Napoleon had tried this principle himself—you may put aside the two forces, the Austrian and the Prussian forces on either wing as not taking any important part in the campaign—the mere physical difficulties of his defence brought him to a standstill and ruined him. Moltke, in 1866, saw the wisdom of using a double line of operations, and by his able concentration at the battle of Königgrätz he thoroughly defeated the forces opposed to him. You will always find in future wars one, two, or three lines of operations, because it is impossible to concentrate the forces of a large army if you adhere to one line of operations only. That, I think, is the central point, that whether you see one or whether you see two or more lines of operations on the day of battle, the principle still holds good of being able to concentrate the whole force to deliver a telling blow against your opponent. There is another point which comes out, to which the lecturer has alluded, viz., it is only in modern times that we hear publicly preached the doctrine that the first duty of the strategist is to annihilate his enemy. It is true, reading between the lines, you will see this lay at the foundation of the operations of Napoleon, but it is only really in recent years that this has been laid down as a canon of the art of war. Now, with regard to the study of military history, I cordially support every word the lecturer has said. I have never been able to understand why the history of our wars with foreign nations should not be just as interesting, just as good a basis of teaching, as the internal dissensions to which you have alluded. I am going to speak very plainly. There is a reason why all this has been abandoned, and the reason is this, that at the public schools—to our shame be it said—the history of England is never systematically taught ; the public-school boy enters the world with an absolute ignorance of the great facts that have gone to make his country what it is. He knows nothing at all about it, and the reason is a plain and simple one, that the average public-school master has been educated in Latin and Greek and nothing else, and he thinks outside these subjects there is nothing else worth teaching anybody. The consequence is, we have got into this position, that the history of our country never is taught, it never has been taught, and never will be taught until parents found a Trades Union for the Reform of Public Schools, and boycott them if they do not bring up their children on a reasonable and proper system of education. As to the training for the Staff College, I happen to know a

distinguished officer (I will not mention his name), who said to me:—"James, it is all very well to say that a study of military history is very important; but the only thing you can examine a fellow in is mathematics." Well, I deny that. But it is a lamentable thing at the present moment that there is absolutely no inducement whatever with regard to professional success for an officer to study strategy. If he desires from his own innate love of the art of war to do so he will do it, but certainly there is no inducement in the present curriculum for entrance into the Staff College to induce him to give anything but the most cursory glance at the subjects as they are at present marked for entrance to that institution.

Lieut.-Colonel E. GUNTER (late East Lancashire Regiment):—I only want to say a very few words merely to back up what the lecturer—to whom we are much indebted for a very interesting lecture—said in regard to the teaching of strategy, and I hope he will use his influence with the authorities to introduce some teaching of strategy into the Sandhurst course. Notwithstanding what has been said of the difficulties of examination, I do not see why a limited course of strategy in the simplest possible form should not be also introduced into the examination for Militia candidates for the Army. Somehow or other the candidates will not read military history, although we know that "Napier" reads like a novel and is a most delightful book in every way. Still in these days, as the lecturer remarked, the officer has so much to do and so many subjects to study that unless the subject of strategy is made compulsory by our military schools, and to a certain extent more encouraged than it is among the officers of the Army, they will not find the time for it. Without going into any detail of the matter as to the methods, I only simply wish to express the hope that the authorities may see their way to revive the study of strategy which formerly was carried on at Sandhurst. As an old cadet I can say that there is no part of our teaching there which I look back to with greater delight, or which was more interesting to us than our early lectures in strategical methods and campaigns. I think it was my old friend and professor Colonel Charles Cornwallis Chesney who was the first to really bring that in, though the others who followed him were able men. I am sure it would be of the greatest interest to cadets, and of great profit to the officers of the future.

The CHAIRMAN (Major-General J. F. Maurice):—I do not think there is much that need be said. Colonel Henderson does not wish to reply to anything, because everybody has agreed with him. But I think I may say with reference to what Captain James has said as to the reward being adequate to officers to study matters of strategy and military history, which he very wisely has run together, that the practical result is this, that nobody is going to succeed much in war without making a pretty close study of them. Lord Wolseley has said to me in his quiet way, "At the time I was (as I suppose every fellow does) going over these campaigns of Napoleon"—and so on, and so on, mentioning many other things he did—"I worked out so and so." I wish you to notice that he makes a practical assumption that he did no more than other people; but I am afraid that that does not happen to be quite consistent with the facts. A good many other people do not do the work that he did, and very largely at least his success is due to the fact that he found himself among a number of other people who thought it unnecessary to give attention to their profession, while he did give most careful attention to it. It was exactly the same thing in the case of Napoleon, as we all know. The more closely you follow it out, the more you find that the work and time that he devoted to the study of military art, as he has explained to himself, was superior to that of any of his contemporaries. I think I might almost say that it was as superior as was his genius in other respects. The two went together. Wellington did exactly the same thing. He said he had been from the very beginning of his life devoting a certain number of hours every day to the theoretic study of his

profession. I do not know where you are going to find any men who have done very much, and have come to the front, who have not devoted themselves to such study. All you want to do is to make young officers understand how all-important to them it is, and to give them the opportunities of study which are absolutely essential if they are to do any good service afterwards. They may, of course, be successful in some other line of life; but I do not see how they can possibly understand what the meaning of war is, unless they learn it from the experience of others. In fact, in nine cases out of ten, Sir Charles Napier's statement is absolutely true, that a man finds himself in a certain position in command of men and with great responsibility, and the thing in which he fails in is not want of ability, but want of previous study of the things with which he finds himself compelled to deal. You cannot get that knowledge how to act except by experience, and as you cannot get your own experience except by perpetual war—which, happily, does not fall to the lot of many men—there is no other way of getting it except by reading the history of war and studying the experiences of others; that is, in fact, the principles of strategy. Therefore, I think we owe a great debt to Colonel Henderson for having pressed home the fact that no adequate steps are being taken to draw the attention of young officers, either at Woolwich or at Sandhurst, to the all-importance to them of making that further study of history which he has advocated. I am sorry for it. The reason of it is that there is a sound opinion that study should be very thorough at those schools, and therefore they are very anxious to limit the number of subjects. That is a very proper feeling, but, on the other hand, it does seem to me that candidates, both at Woolwich and at Sandhurst, ought to be made to feel that under no circumstances can their instruction be more than opening the door to them to what they must themselves enter upon afterwards. The subject of war in its larger aspects does really interest them very much indeed if it is properly put before them; and if they are made to feel that all that can be done for them is to show them how much there is to learn and how much good it will be to them to learn it, a very great service is done to them in their start in life. Therefore, I think we owe a very sincere vote of thanks, which I am sure I may offer from you, to Colonel Henderson, for having drawn attention to a most important subject, and a most valuable one.

RECENT CHANGES IN THE RIGHTS AND DUTIES OF BELLIGERENTS & NEUTRALS ACCORDING TO INTERNATIONAL LAW.

LECTURE No. 1.

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Thursday, May 19th, 1898.

Sir R. GIFFEN, K.C.B., in the Chair.

WHEN I arranged with your Secretary some six weeks ago to lecture on the rights and duties of neutrals and belligerents, I did not anticipate that the subject would have the living interest which it now possesses, that war between two great States would have broken out, would be running its course, and would have solved problems which I had intended discussing, and raised others of which I had then no thought. I shall not attempt to discuss all the many interesting questions of international law raised by the events of the last month. Far less shall I seek to cover the entire field of belligerents' and neutrals' rights and duties—a subject on which whole libraries have been written. My intention is much less ambitious; it is merely to point out some recent changes in parts of international law, and to investigate the present direction of opinion. Studying the character of these recent changes, we may perhaps be able to form a surmise as to the future.

International law, as you are aware, consists of a collection of usages, practices, traditions, rules, and conventions, never fixed, though endeavours are constantly being made to stereotype this collection. Never was this state of transition more marked, never were changes more rapid and frequent, than at present. International law is not a mere store-house of rules coming down from a far-off past; it is a living and growing law; some parts of it once important are in process of decay; in other parts is

life and the promise of it. International law has no recognised organ or mouthpiece—no Parliament or Congress to declare or amend its measures. Yet it advances—sometimes rapidly; never more rapidly than to-day. By few expounders of international law is sufficient notice taken of this element of change. And so there is an international law known to soldiers, diplomats, and men of affairs, and another partly obsolete but still taught in books.

I do not merely refer to writers who crudely jumble together in fine confusion precedents drawn from antiquity and the events of yesterday, from Elizabeth's reign and Victoria's, and who wander, to use Professor Cairnese's expression, "through the mazes of exploded systems and obsolete ideas." I allude to a venial and more common failing. Even expositors who were excellent in their generation and who wrote with a nice sense of proportion, cease in a few years to be in touch with the opinions and facts moulding international law. No modern writer is held in greater esteem than Wheaton; but many passages in the first edition of his work, published in 1836, have as little relation to the ideas of our time as many of the dicta of Vattel or Puffendorf. Few writers take sufficient account of the declining authority of many precedents, the adoption of new standards of conduct, the appearance of new interests and forces, and what I may term a displacement of social values. Many of the best of those treaties are written for a world which is not ours; a circumstance which discredits international law in the eyes of men of the world who, as diplomats, or in position of military or naval command, seek its guidance. I am glad to bring before this assembly this subject, chiefly because I am persuaded that, if international law is to retain, or, to be more exact, to regain its old authority, it must take into counsel more than it has done the soldier, the seaman, and the diplomatist. There has been a little too much spinning of cobwebs of the library, because the expositors of international law have not sufficiently collaborated with its administrators.

One consequence of this state of change is the fact that jurists and writers on international law are not prepared as they once were with confident answers to questions often arising and calling for prompt decisions; doubts prevail as to the validity of rules once deemed fundamental; text-books speak with uncertain voice as to matters of the first moment; and there is a state of revolt against many old precedents.

Three or four great recent changes in international law may be noted. All of them have affected the rights and duties of neutrals and belligerents.

The first of these changes has no doubt lessened its authority of international law. The older writers on the subject had a standard to which they appealed in all their difficulties. They asked themselves what the "law of nature" dictated to men engaged in warfare or diplomacy; and for them the answer given by this oracle, which was never dumb, was final. It is true that this "law of nature" was sometimes a thin disguise for the passions of the hour. Often it sanctioned the worst abuses. A sort of ventriloquism was practised; learned men seemed to project their voices

some distance from themselves, and their voices came back to them as the utterances of the "law of nature." At best the "law of nature" was only the shadow of men's own conscience which imagination lengthened and magnified into a superior being, ever accompanying and guiding them. Often the phrase designated a school of philosophical thought dominant in the eighteenth century; of the same family as the philosophy of the economists of last century. But, whatever its real nature, this "law of nature" lent authority to international law.¹

Nearly a hundred years ago, at no great distance from this place, Sir James Mackintosh delivered a course of lectures still remembered, on the Law of Nations; and it is interesting to note the confidence with which he speaks of the power of this "law of nature"—"a supreme, invariable, and uncontrollable rule of conduct to all men"—to settle all disputes. The imperfections and ambiguity of the utterances of this oracle were long concealed from those who consulted it in a reverent and obedient spirit. To-day we have no such guides. All jurists have their doubts as to either the reality of the law of nature, or the possibility of ascertaining its precepts. This change has somewhat diminished for the moment the influence of international law, which can no longer claim to be a system of law of higher authority and antiquity than any form of municipal law.

A minor change has been attended by a similar result. The early writers on international law turned in all their difficulties to the rules of Roman law, a system then almost universally accepted as the type of perfect law. If an apt analogy were found in the Digest, its authority in regard to the law of prize, or booty, or modes of acquisition or the right of possession, occupation, or conquest was not questioned, except by someone who fancied that he had found in the same storehouse of wisdom another analogy still apter. In Grotius and Bynkershoeck—the latter probably by far the more acute mind ever directed to the science—this proneness to identify the law of nations with the law of Rome is most marked; it still characterises some writers. On the whole, this influence was beneficial. True, Roman law contained no large principles directly applicable to public questions; as to these it was meagre and imperfect; it was the law of a people to whom war was the normal order of things, who were too powerful to take note of anything in the world except themselves and their enemies, who had no clear conception of neutrality, and for whom slavery was the foundation-stone of society. But Roman private law was useful in giving form to vague ideas; the efforts of the jurists of last century to put many doctrines in the guise of the language of the Digest, was conducive to precision. The principles to be found in the Institutes and the Digest as to the sea being among the things common to mankind, were favourable to freedom of navigation. They furnished arms for Grotius in arguing for a *Mare Liberum*.

¹ This is not the place in which to examine the philosophical ideas of the founders of international law. But I may here refer to Robert Zimmermann's brochure "Das Rechtsprinzip bei Leibnitz," as particularly instructive on this point.

They helped to settle the principle that "the ocean is the public road of the universe."¹

All this is changed. Roman law is no longer studied as it once was; and the students of it would not claim for it the ascendancy which it once possessed in public and private affairs. To-day those most conversant with Roman law are most aware of its limitations, and most struck by the incompatibility of many of its doctrines with the requirements of modern civilisation.

These two changes have had one consequence, which I, as a lawyer, note with regret, but to which I cannot shut my eyes. The influence of the jurist and of purely legal considerations in the development of international law and especially as to the usages of war is distinctly less than it was. The old formulæ do not help to solve the new problems arising in international law; for example, such a question as that raised by the case of the "Huascar." Questions of disputed boundaries are settled by diplomatists with reference less to legal doctrines as to occupation than to the watershed and physical characteristics of the country. Once it was discovered that the "law of nature" was either a shadowy abstraction, or, in the words of Lord Somers, "a wild uncertainty," and that it was the passing opinion of the civilised world on international questions, that Roman law had no right to speak as the voice of reason and conscience as to the problems of peace and war, the jurist lost for a time some part of his influence. He spoke as others, not as having authority; he was no longer the depository of the sacred oracles; and he might be disregarded by diplomatists and commanders without sinning against the light. I shall be pardoned if I state that this is by no means a clear gain to the world. It is the fashion nowadays, especially among representatives of the school known in Germany as "military realism"—a school of writers of whom I shall have something to say—to disparage the labours of jurists in this field. I venture to think that their influence has been greatly beneficent. If war is more humane than it was, if some cruel practices have been weeded out or discredited, it is largely due to the teaching of jurists who have striven to carry law into the very heart of disorder, and to find a basis of reason for the impulses of humanity. Stowell, Marshall, Kent, Lushington, Portalis, and Kingsdown, were the voices of the educated conscience of their times, and they laboured not in vain to elevate the actual usages of war into accordance with higher ideals. No one can be familiar with the great historical controversies of last century and this as to neutral and belligerent rights without feeling that the influence of jurists made for peace, humanity, and civilisation. If I am not mistaken, we may discern from time to time in modern diplomacy some evil effects of the decline—temporary, it is probable—in the influence of the expositors of international law. Public questions are discussed with a certain cynical avowal of the principle that might makes right, that "blood and iron" count for much more than the

¹ Jenkinson's "Discourse on the Conduct of the Government of Great Britain in respect to Neutral Nations," p. vi.

law of nations, that the line of conduct of one State to another is to be determined by their relative military and naval strength, and that all other considerations are vain sentiments.

Time does not permit me to specify all the recent changes in international law. I can allude only to one or two. In all the early text-writers the doctrine of the equality of States, irrespective of strength, was laid down. But this phrase was used along with language of a very different character. With more or less instability since the Peace of Westphalia, and certainly since the Treaty of Vienna there had prevailed a conception of a normal political order in Europe, which it was criminal to disturb. Statesmen professed to act—even if they did not in truth always act—in accordance with a certain *droit public européen*, of which the chief maxims were these: that peace is the normal condition of things; that States are independent of each other and in all respects equal; and that no State has the right to interfere in the affairs of another unless its security is affected. To these rules and maxims what may be termed the official writers appealed with confidence that they would not be questioned. Could we say as much to-day? Could we have said as much any time during the last twenty years?

Often during the last fifty years has the principle of nationality come into collision with some of these maxims—*les maximes essentielles et incontestées du droit public européen*.¹ The political aspirations of several races—Italians, Germans, Hungarians, and others—proved irreconcilable with the order of things which diplomacy had established. Nowadays the doctrine of the equality of States is pronounced to be virtually obsolete. A fiction in one sense that doctrine always was; Switzerland did not count for so much as France. The doctrine is in fact part of an obsolete system of political philosophy; according to Wolff and his populariser, Vattel, each nation lived in a state of nature, each nation was entitled to the same rights, just as all men, whatever their stature, are entitled to the same rights. The doctrine slurred over difficulties as to what communities are independent States. But it emphasised the fact that international law was a collection of rules applicable to all complete or sovereign States; and that just as private law assumes equality between the individuals under its sway, so must international law assume the equality of States. It was another way of saying that they were independent. According to the theory of the balance of power, or what Kinglake terms the “great usage,” there was an inner circle of States with larger authority than those outside it. The formation of these political unions has shaken the doctrine of the Equality of States, the foundation-stone of the international law of Grotius and Vattel. The sharp line of distinction drawn by earlier writers between Christian and non-Christian communities no longer exists. The older writers on international law speak of it as expressing solely the usages of Christian States. Lord Stowell was accustomed to refer to communities outside that circle or pale, much as Lord Coke, about two centuries before, spoke of Turks as heathens—much as the Greeks about twenty centuries earlier spoke of

¹ Guizot's “Mémoires,” vol. 4, p. 5.

barbarians. In this respect a change has taken place. Turkey has been formally admitted into the group of European Powers since 1856. Persia and Siam are in much closer relation to us than they were. Japan, with her rapid assimilation of Western civilisation, and with the abolition of consular jurisdiction, has taken her place among the communities within the region of international law. Instead of a concert of nations based on a common religious system, there is one based on a common civilisation.

That change is not all for the good. It has produced a new form of intolerance. It has apparently sanctioned the exclusion of non-civilised communities from the purview of international law. It has encouraged the idea that the advance of civilisation condones all things; and it has sanctioned an attitude towards uncivilised races akin to that assumed by Jew to Gentile, Greek to Barbarian. A new chapter in international law—a chapter which will recognise and define the duties of civilised communities to uncivilised or savage races—will, perhaps at no distant date, be written. Some lines of it are already penned. The Berlin and Brussels Conferences, in spite of the meagre results attained, gave the promise of better things.

I should not have completed the list of important changes—I am not sure that I should not have omitted the most important of them—if I did not refer to what had been called the spirit of "military realism," a spirit which finds eloquent expression in much of the best military literature of Germany, for example, in the writings of Clausewitz and von Hartmann; a spirit of distrust and antagonism to the intrusion of law into regions in which the soldier is and must be, it is said, a law unto himself; a belief that not the law of nations but military necessity must determine what is lawful and what is not in warfare.

Much of this long preface may seem to be remote from the question of recent changes in the rights and duties of neutrals and belligerents. But I believe the above considerations will help us to distinguish the living international law from that which, though still to be found in books, is dead, or dying, and enable us to see more clearly the present trend of opinion.

In dealing with the chief recent changes which have taken place in international law, I take as the starting-point the close of the war with Russia, which was, in fact, the beginning of a new era in the laws of war. For the sake of convenience, I have divided the topics of discussion into two classes: those chiefly affecting war at sea; those affecting war on land.

In 1856, the great Powers issued the Declaration of Paris, of which we have heard much lately. The history of the Declaration is still shrouded in some mystery. Neither Lord Clarendon nor Lord Cowley, the diplomatists most directly concerned, gave a full account of the negotiations; the only detailed statement is one published by M. Drouyn de Lhuys, who was French Foreign Minister at the time.¹ According to that statement—and it was borne out by the remarks which

¹ See appendix to report of Neutralisation Commission.

fell from Lord Clarendon—the Declaration would have been made by the bulk of civilised States, whether we had acceded to it or not. The Emperor, Napoleon III., had then many humanitarian ideas in his mind; one of the *idées Napoléoniennes* was the mitigation of the evils of maritime war, an idea, prominent we know, in his uncle's memoirs.

The first principle which the Declaration of Paris enunciated was: "Privateering is abolished." When privateering began I do not know.¹ Martens, in his Essay on Privateering, traces it back to the end of the fourteenth or the beginning of the sixteenth century. It is not long since even the subjects of neutral States sought and obtained from belligerents letters of marque, enabling them to capture vessels of countries with which their own was at peace. In our wars with France and America, letters of marque were issued freely by all belligerents; and there is no doubt that these privateers committed great depredations on our mercantile marine:—

"In the last great war, 1793-1815, our Admiralty issued 10,000 letters of marque, yet despite that vast addition to our naval strength, we lost close on 10,000 merchant-vessels, and we captured but 1,000 of the enemy's privateers."—Norman's "Corsairs of France," p. vii.

"In the space of 40 years, 4,345 prizes were sold by the Admiralty Court at Dunkirk for the sum of £6,327,000; 34,750 prisoners during that period were detained for various terms in that town. In the single year 1751, 251 English prizes were carried into Dunkirk."—*Ibid.*, p. 21.

"It appears that from the commencement of the war with France in July, 1776, to the following May, that is a period of ten months, the value of the prizes taken by Liverpool ships alone amounted to £1,025,600."—Laughton's "Studies in Naval History," p. 205.

Many restrictions were placed on the owners and captains of privateers with a view to prevent certain abuses to which they were prone. By the ordinances of most States, the owners were required to enter into bonds for their good behaviour. According to English usages, privateers were required not to hoist any jack, pennant, or ensign usually borne by King's ships. In spite of the precautions to ensure the good conduct of privateers, they acquired a bad reputation. The officers and men were bound by no rules of professional honour. The officers of the Navy found fault with them; they were accused of being more eager for plunder than for fighting; and they rarely, if ever, affected the results of any war. It is well known that Nelson and Codrington condemned the conduct of these "lawless libertines" as nothing short of piracy.² In the American Civil War, the South had thought of issuing

¹ See as to origin of privateering Pasquale Fiore, 2, 336; Shephard's "Capture of Private Property at Sea," p. 67. Martens (Essay on Privateering, p. 1) defines privateering as "the expedition of private individuals during war, who, being provided with a special permission from one of the belligerent Powers, fit out at their own expense one or more vessels with the principal design of attacking the enemy, and preventing neutral subjects or friends from carrying on with the enemy a commerce regarded as illicit."

² See Professor Laughton's "Studies in Naval History" as to privateers. He cites, p. 196, the remark of Nelson, "The conduct of all privateers is, as far as I have seen, so near piracy that I only wonder any civilised nation can allow them."

letters of marque; but the proclamation of the United States that the crews if captured would be treated as pirates had no doubt an effect in preventing the issue of letters of marque. The "Sumter" and "Alabama" were Government vessels. Since 1856 no letters of marque have been issued by any civilised State. In the Franco-German war, the German Government contemplated the formation of a volunteer fleet. The French Government remonstrated; they complained that this was a violation of the Declaration of Paris. But in the opinion of our law officers, to whom the question was referred by our Government, the objection was unfounded, as the crews would be to all intents and purposes under the same discipline as that applicable to the Prussian Navy. A similar objection was taken to the auxiliary navy formed by Russia; but, as far as I can see, without ground. In law no clear distinction exists between a privateer and a regular ship-of-war, other than the fact that the former fights only in virtue of a special commission and is owned by private persons. Had Spain carried out the intention which she announced of forming an auxiliary fleet, on the model of that of Russia, I do not think that she could be said to be really sanctioning privateering.

Perhaps the growing sense of humanity and recollection of the squalid abuses connected with privateering had something to do with its disuse. But much is due to the fact that it is no longer the cheap defence of nations; the transformation of a merchant-vessel into an efficient cruiser is not so easy as it was in the days of Paul Jones or Jean Bart; when that transformation is practicable, there is little in the Declaration of Paris to prevent it. I am afraid that the first article of the Declaration binds the signatories to very little. It has obtained general adhesion by reason of its ambiguity and elasticity.

I come now to a much-debated question. Article 2 provides "The neutral flag covers enemy's goods, with the exception of contraband of war." Of the value and expediency of this much-discussed principle, I shall have something to say; but in the meantime I would remark that this closed a long controversy in which England had, on the whole, consistently maintained her right to seize all enemy's goods wherever found,¹ and in which, on the whole, Continental practice, with many vacillations, had been opposed to ours. That we acted within our rights in affirming this principle, which had come down from distant ages, was clear. It is questionable, however, whether the loss which we sustained in abandoning a principle which seemed to Lord Liverpool, Pitt, and the statesmen of the first part of the century, the corner-stone of England's maritime greatness, was so serious as is supposed. I envy the confidence with which many persons speak on this point. To me, the future effect of

¹ Paine, with his usual unfairness and unfriendliness to England, thus describes, in 1782, her policy:—"Her fleets were employed as engines of prey, and acted on the surface of the deep the character which the shark does beneath it. On the other hand, the Continental Powers are taking a popular part, and will render their reputation immortal by establishing the perfect freedom of the ocean to which all countries have a right and are interested in accomplishing."

the abandonment of the right to seize enemy's goods in neutral bottoms seems exceedingly obscure ; and if I put forward certain conclusions, it is with distrust as to any solution of a problem depending on several uncertain elements. In the first place, it is not clear that we could have prevented a general affirmation by the civilised world of the principle " free ships make free goods." It is not clear, that we could have maintained our ancient principle without provoking the hostility of neutral nations, and it is still less clear that we could now rescind what we did in 1856, and freely exercise in 1898 against the whole world invidious rights which the victories of Nelson enabled England to assert in 1806. Captain Mahan's words on the point are not without value :—

"In her secure and haughty sway of the seas, England imposed a yoke on neutrals which will never again be borne ; and the principle that the flag covers the goods is forever secure."—"The Influence of Sea Power on History," p. 84.

Neutrals count for more than they did when our fleets enforced the doctrine "enemies' ships make enemies' goods." The belligerent must take account of their feelings and convenience to a degree unknown in the Napoleonic wars, if there is not to be another "armed neutrality" more formidable than the armed neutrality of 1780 and 1800. It is significant that at the beginning of the present war English and German shipowners resented the idea of their ships being stopped and overhauled in search of belligerents' goods. Suppose that England being at war with Germany, our cruisers insisted on overhauling every American or French liner in search of German goods, and brought mail-steamers into Dover, Southampton, or Portsmouth in order to examine the cargo and ship's papers, and to open the mail bags. Would not such a course lead to complications?¹ No doubt the immunity from capture of goods in neutral bottoms would operate as a premium or a preferential duty in their favour ; but what would be its amount ? How far it would cause a transfer of our ships to foreign flags is doubtful. The laws of several countries put impediments in the way of such transfers. The results of the captures by the "Alabama" and her consorts are, it is said, no certain guide to the experience of future maritime wars ; the "Alabama" captured sailing-vessels taking definite trade routes ; cruisers in the future may not have the same luck in regard to steamers able to take any routes and make any detours they please.

To those who speak of the Declaration of Paris as a surrender made *per incuriam* and who dread a wholesale transfer of British mercantile marine to neutral flags, Professor Westlake² points out that this opinion

¹ The point may be put in the words of the late Field-Marshal Burgoyne ("Life and Correspondence," 2, 503) :—"Suppose a fine merchantman (belonging to a neutral State) such as we have navigating from Europe to India and Australia, with a moderate usual armament, to be met at sea by a small man-of-war of a belligerent, of really very inferior force, is that going to allow itself to be detained and searched or perhaps taken possession of as a prize by a dwarf ? The doctrine of the Solicitor-General would imply yes. But it is contrary to human nature to suppose that such a law would be submitted to."

² Westlake's "International Law," p. 250.

does not take "sufficient account of the immense aggregate of the prices which would have to be paid for wholesale *bonâ-fide* transfers of British ships, an aggregate far exceeding what neutral buyers could supply on short notice; or the fact that transfers which were not *bonâ-fide* would not be valid against a belligerent; and of the necessary consequence from these two premises, namely, that an enemy would bring in the transferred ships wholesale for inquiry by their Prize Courts into the circumstances of the transfer. A great rush to transfer would be followed by the discovery that war rates of insurance were heavy even under the neutral flag."

I speak with diffidence on this subject, and I admit that there might be naval wars in which it would be prudent to revert to the old rule. While we are neutrals, however—and we generally are such—the principle "free ships make free goods" is to our advantage; and probably we must accept it, for better or worse, as a permanent part of maritime law.¹

No doubt the present state of things is anomalous. I agree with those who, like that unwearied advocate of reform in maritime law, the late Mr. Danson, hold that private property other than contraband ought to be secure from capture at sea—at all events, that the practice as to capture at sea should be assimilated to the practice on land.

For all concerned, but especially for England, which stands to lose most, it would probably have been well if the offer held out last century by Jefferson and Franklin, and repeated by the United States in 1856 and 1870, to exempt such property from capture, had been accepted.

Consider the extent of our commerce. I do not propose to trouble you with figures or diagrams. You all know Nelson's Column; note the figure on the top; that will roughly represent the total value of exports and imports at the time when the great Admiral lived and fought. The total length of the Column itself will represent the recent value of our exports and imports. Of the increase in our shipping, and of the share of the shipping of the world which we held at the beginning of the century, it is impossible to speak with confidence; there are no trustworthy statistics as to the earlier date, and comparisons are deceptive. But you may picture the total tonnage of the world by the total length of the Column, and about one-half of that represents British tonnage.

It is important to bear in mind that the capture of private property at sea does not seem to have appreciably affected the result of any great war. Trafalgar, the battles of the Baltic and the Nile, the campaign in Russia, the Peninsular War and Waterloo, were decisive—not the captures of French schooners or Spanish galleons. They enriched and

¹ A shipowner of great sagacity and experience, writing to me of the transfers of British ships which would take place in the event of our being at war, remarks: "The transfer would not, I think, be permanent. It would still be British capital which would work the business, and its control would be secured, in some way, say by mortgages. . . . When we had cleared the seas of the enemy's cruisers, and still more when the war was over, we should be back in our position of being the principal carriers by sea."

demoralised a few owners of privateers; they ruined individuals here and there; wars ran their course, while privateers burned, sank, and destroyed. There is, too, something incongruous and undignified in the accounts which we have had lately of the fleet of a great Power "bailing up" or "sticking up" small schooners or brigs laden with molasses or pottery. Further, the liability to capture private property is to be regretted, because it is out of harmony with the practice observed in modern times in civilised warfare on land. No one has put more impressively than Napoleon the antithesis between the two modes of warfare—no one has insisted more emphatically—on the fact that the methods of mediæval times, which did not spare the non-combatants, still linger at sea. Cobden often expressed the same idea, but not with the directness, felicity, fervour, or authority of Napoleon;¹ whether he acted on his own maxims is beside the point:—

"Le droit des gens, dans les siècles de barbarie, était le même sur terre que sur mer. Les individus des nations ennemis étaient faits prisonniers, soit qu'ils eussent été pris les armes à la main, soit qu'ils fussent des simples habitants; et ils ne sortaient d'échange qu'en payant une rançon. Les propriétés mobilières, et même foncières, étaient confisquées, en tout ou en partie. La civilisation s'est fait sentir rapidement et a entièrement changé le droit des gens dans la guerre de terre, sans avoir le même effet dans celle de mer. De sorte que, comme s'il y avait deux raisons et deux justices, les choses sont réglées par deux droits différents. Le droit des gens, dans la guerre de terre, n'entraîne plus le dépouillement des particuliers ni un changement dans l'état des personnes. La guerre n'a action que sur le gouvernement. Ainsi les propriétés ne changent pas de mains; les magasins de marchandises restent intacts, les personnes restent libres. Sont seulement considérés comme prisonniers de guerre les individus pris les armes à la main, et faisant partie de corps militaire. Ce changement a beaucoup diminué les maux de la guerre. Il a rendu la conquête d'une nation plus facile, la guerre moins sanglante et moins désastreuse. Une province conquise prête serment, et, si le vainqueur l'exige, donne des otages, rend les armes, les contributions se perçoivent au profit du vainqueur, qui, s'il le juge nécessaire, établit une contribution extraordinaire, soit pour pourvoir à l'entretien de son armée, soit pour s'indemniser lui-même des dépenses que lui a causées la guerre. Mais cette contribution n'a aucun rapport avec la valeur des marchandises en magasin; c'est seulement une augmentation proportionnelle plus ou moins forte de la contribution ordinaire. Rarement cette contribution équivaut à une année de celles que perçoit le prince, et elle est imposée sur l'universalité de l'état; de sorte qu'elle n'entraîne jamais la ruine d'aucun particulier.

Le droit des gens qui régit la guerre maritime est resté dans toute sa barbarie. Les propriétés des particuliers sont confisquées; les individus non-combattants sont faits prisonniers. Lorsque deux nations sont en guerre, tous les bâtiments de l'une ou de l'autre, naviguant sur les mers, ou existant dans les ports, sont susceptibles d'être confisqués, et les individus à bord de ces bâtiments sont faits prisonniers de guerre. Ainsi, par une contradiction évidente, un bâtiment anglais (dans l'hypothèse d'une guerre entre la France et l'Angleterre) qui se trouvera dans le port de Nantes, par exemple, au moment de la déclaration de guerre, sera confisqué; les hommes à bord seront prisonniers de guerre, quoique non-combattants et simples citoyens; tandis qu'un magasin de marchandises anglaises, appartenant à des Anglais dans la même ville, ne sera ni séquestré ni confisqué, et que les négociants anglais voyageant en France ne seront point prisonniers de

¹ "Mémoires pour servir, etc." Vol. 2, p. 92.

guerre, et recevront leur itinéraire et les passeports nécessaires pour quitter le territoire. Un bâtiment, naviguant et saisi par un vaisseau français, sera confisqué, quoique sa cargaison appartienne à des particuliers ; les individus trouvés à bord de ce bâtiment seront prisonniers de guerre, quoique non-combattants ; et un convoi de cent charettes de marchandises, appartenant à des Anglais, et traversant la France, au moment de la rupture entre les deux puissances, ne sera pas saisi. Dans la guerre de terre, les propriétés même territoriales que possèdent des sujets étrangers, ne sont point soumises à confiscation."

It is possible that this passage exaggerates the contrast between the two modes of warfare ; the statements as to the immunity of property on land are of the nature of counsels of perfection.¹ But a real contrast exists.

In stating the objections to the difference between the treatment of private property on land and that of similar property on sea, one cannot lose sight of the fact that exemption from capture on sea is probably for a long time to come out of the question. Such exemption would be in war to the supreme advantage of England, which stands to lose so much. It would therefore be to the disadvantage of our opponents. We cannot hope that other nations knowing our weak spot will relinquish this right.

The Declaration of Paris did not deal with contraband of war. As to this in recent years, neither here nor elsewhere has there been any distinct change. There still prevail two distinct policies on the subject—on the one hand, the Continental system, according to which a definite list of articles is declared contraband ; on the other hand, the English and American policy, which recognises as contraband of war a fluctuating class of articles known as conditionally contraband, and liable to seizure according to their destination. The indefiniteness of the latter policy causes shippers and merchants much inconvenience, and the tendency of some of the latest decisions has been to increase the difficulty of merchants. They had a tolerably clear guide then when they knew that a destination to a belligerent port was of the very essence of contraband. Coal conveyed in a neutral vessel to a neutral port could not be contraband in a war between France and Germany, even if it probably would be conveyed overland to a French or German port, and there put on board a belligerent cruiser. In view of a series of decisions of the American Prize Courts during the Civil War, the question is no longer so simple as it once was. Developing doctrines put forward by Lord Stowell at a time when he was expounding the law of nations much to the disadvantage of neutrals, the American Courts laid it down that cargo on its voyage to a neutral port might be seized on that voyage if it was intended to tranship the cargo at such neutral port for a belligerent port. "If the ulterior destination (of the cargo) is the known inducement to the partial voyage, and the ship

¹ Contrast the above passage with Clausewitz's description of Napoléon's methods. "On War." Book 5, c. 14. The best historical account of the right of capture is Bluntschli's "Das Beuterecht im Krieg."

The late Lord Idesleigh once remarked that the best reason held for maritime plunder was that given by Sir James Mackintosh, viz., that plunder by sea was more out of sight and caused less indignation than plunder by land, but that this reason was a bad one.

is engaged in the latter with a view to the former, then whatever liability may attach to the final voyage must attach to the earlier, undertaken with the same cargo and in continuity of conveyance." Pushing the doctrine of "ulterior destination" a step further, the Supreme Court sanctioned in the case of the "Peterhoff"¹ the seizure of a cargo on a voyage from London to Matamoros, a neutral port on the Mexican side of the Rio Grande, on the ground that part of the cargo, artillery harness, artillery boots, etc., was to be conveyed overland to Wilmington or Charleston in the Confederate States. "It is true," remarked the Court, "that even these goods, if really intended for sale in the market of Matamoros, would be free of liability, for contraband may be transported by neutrals to a neutral port, if intended to make part of its general stock of trade. But there is nothing in the case which tends to convince us that such was their real destination, while all the circumstances indicate that these articles, at least, were destined for the use of the rebel forces then occupying Brownsville, and other places in the vicinity."

It must be conceded that but for the theory of continuous voyages blockades may be easily evaded in these days of developed railway communication. None the less is a new chain on neutral commerce forged by those decisions. Not a cargo of goods of any possible use to an army or fleet can safely be shipped to Jamaica or other islands adjoining Cuba if the doctrine of "continuous voyages" be rigorously acted upon. We may however, perhaps, in this war, hear little of that doctrine.² A characteristic of the naval operations in this war, so far, has been a desire to study the interests of neutrals, and not to press too far the claims of belligerents.

No Prize Courts have in recent years sat in this country; and there have been no examples of their decisions. When they go to work we shall see them applying doctrines and principles of a startling character and highly unfavourable to neutrals; doctrines and principles formed, and "standing interrogatories" drawn up, at a time when belligerents were a law unto themselves. To name one anomaly, the Prize Courts are accustomed to act on certain rules as to the ownership of ships and property, which cut the knot of many difficulties but do not exactly solve them. One such is that goods *in transitu* on the ocean are presumed to belong to the consignee; another is that property is presumed to remain in the same hands from the time it is shipped until delivery, and that transfers of property during the voyage are not recognised. The object of these rules was clear; they are wholly at variance with the facts of modern commerce. The ground of the doctrine was explained by the Prize Council in *Sorenson v. The Queen* (11 Moore, P. CC., p. 146):—

"The difficulty of detecting frauds if mere paper transfers are held sufficient is so great that the Courts have laid it down as a general rule that such transfers without actual delivery shall be insufficient."

¹ 72 U.S. 28. See Hobbs and Hennery 17 C.B. 791.

² See the case of the "Doelwijk" during the Italian-Abyssinian War, *Revue de Droit International*, 1897, p. 66. It now appears (June 30th) that complaints are being made that Jamaica is being used as a basis of supplies for the Spanish troops in Cuba.—*Times*, June 30th, 1898.

Even in the days of Lord Stowell the most that could be said for the above rules was that they did not always work injustice; to-day they would be too rough to be tolerated. In a single parcel of goods, half-a-dozen interests may be concerned. If a vessel carries a general cargo it would puzzle the most experienced lawyer to say in whom was the ownership of all the goods, or the most acute economist to say on whom the loss would fall.

That the Prize Court should be always the Court of the belligerent State; that the nation which has seized the property of neutrals, or is interested in condemning it, should give a decision binding their property and rights; that neutrals should have no voice in the matter—that also is an anomaly, but one too deeply rooted to be removed in our time.

A word may here be said as to a point on which confusion prevails. Members of Parliament lately asked the Government again and again whether they intended to prohibit the exportation of contraband. The Crown has power under the Customs Act, 1879,¹ to prohibit the exportation of certain kinds of contraband, a power which it rarely exercises, and only in the event of the interest of the State being concerned. An armed vessel may be contraband, and as such punishable, and the fitting of it out may also be an infringement of the Foreign Enlistment Act. But speaking generally, there is no power to prohibit the exportation of contraband; the risk of capture is the only penalty.

Neutrality, according to modern international law, is not merely doing in war what a State does in peace. Neutrality involves distinctive duties. It is curious to note how late the true conception of neutrality appears, how imperfect it is in its inception, how slowly it matures. The Romans had no idea of neutrality; they might enter into offensive or defensive alliances with other States; they did not understand a state of indifference or neutrality. In the Middle Ages it was common for the subjects of States at peace with one another to take service with one belligerent or with both. Scholars have discovered here and there traces of the idea; but the notion was rudimentary. It strikes one as strange that an enlightened reformer such as Sir James Mackintosh should have opposed the first Foreign Enlistment Act as an infringement of the rights of the neutral. Even in modern definitions of neutrality it was assumed that neutral nations should continue to do in time of peace what they had done in war.² In his incisive way Napoleon observes:—“*L'État de guerre*

¹ The Customs and Inland Revenue Act, 1879, s. 8 (42 and 43 Vict. c. 21), allows the prohibition, by order in council, of the exportation of arms, ammunition, gunpowder, military stores, etc.

² The great seamen of Elizabeth's reign, the Drakes, Hawkins, etc., did very much as they pleased towards Spanish ships and possessions even in time of peace. So long as the actual territory of a State was not violated no act of war was necessarily committed. Under cover of reprisal, the commerce of a friendly State might be harried, to almost any extent without a final breach of the peace, and Elizabeth seems to have favoured the doctrine that Colonies beyond the seas were in the same category as a mercantile marine.—Corbett's “Tudor Seamen,” vol. 1., p. 122.

ne peut avoir aucune influence sur les neutres ; ils doivent donc faire, en guerre, ce qu'ils peuvent faire pendant la paix." Napoleon did not conceive that war imposed new duties on neutrals, and that they might not be free to do certain things, lawful and customary in time of peace. To the United States, and primarily its great citizens Jefferson and Franklin, is due the first departure from the old idea and the recognition of the modern. The American Foreign Enlistment Act of 1794, prohibited the enlisting of soldiers in the United States. It also prohibited the fitting out of expeditions against friendly States. The difficulty then felt, and not yet solved, was, how to reconcile this policy with the undoubted right of private traders to sell arms and munitions of war to belligerents, subject to the risk of confiscation as contraband ; a right which Congress was not inclined to abandon ; which the United States asserted against France in 1796 ; a right which England, in answer to the remonstrances of Russia, refused to surrender or impair in 1870. "Our citizens," said Mr. Jefferson, in an oft-cited passage, "have always been free to make, vend, and export arms. It is the constant occupation and livelihood of some of them. To suppress their calling, the only means perhaps of their existence, because a war exists in foreign and distant countries in which we have no concern, would scarcely be expected." And so, in pursuance of this policy, the sale of munitions of war was permitted ; and the American Courts held that the sale of a fully-equipped cruiser to a belligerent was not necessarily an offence against the Foreign Enlistment Act.

The English Act of 1819 was formed on the lines of the American Act ; and when our Courts came to apply it to the vessels built in this country for the Confederate Government, they took the same view of the law as the American Courts. In the famous "Alexandra" case tried in 1862 ("Attorney-General *v.* Sillem") Mr. Pollock, C.B., held "that it was no offence to build for and sell and to deliver to one of the belligerents a fully-armed ship." The Act was not framed to make any difference between ships-of-war and guns, ammunition, and other implements of war, but to prevent our shores from being made the points of departure of hostile expeditions, commissioned and equipped to commit hostilities against a belligerent not at war with us." Baron Bramwell took the same view : "The section prohibits that equipment only which is itself such that by means of it the vessel can commit hostilities, and no equipment which gives no means of attack and defence is within section 7." A ship may sail from a port ready to receive on board warlike equipment ; that equipment may leave in another vessel, and be transferred to her as soon as the neutral limit is passed, or at some not remote port, as thus the spirit of international law may be violated, and the letter and spirit of the municipal Act evaded," p. 542). In other words, you build on the Clyde a ship suited to be a cruiser ; you arm her, not on the Clyde, but by arrangement at Dunkirk ; you commit no offence even if you, the builder, knew the design of your customer. I cannot say that the law was put on a perfectly rational and intelligible basis, but it was much altered, and the device which I have described was defeated by the Foreign Enlistment Act, 1870,

which made our neutrality law more rigorous than that of any other country. I will not attempt to discuss in detail this complicated and obscure measure. It is enough to say that it makes penal and visits with fine or imprisonment a larger number of ill-defined offences ; for example, the building or agreeing to build any vessel, despatching, causing or allowing to be despatched any vessel with intent or knowledge, or reasonable ground for believing that the same shall be employed in the naval or military service of a foreign State at war with another State, friendly to England. So wide is the scope of the Act that it includes the manufacturing a submarine cable intended to be used for military purposes ; the helping to tow a prize into the port of a belligerent, and, I am inclined to think, the supply of coal to a belligerent vessel beyond what is allowed by the courtesy and usages of nations. Adding to the number of guns or changing those on board or adding to the equipment—a comprehensive term as defined by the Act—is punishable in like manner. Contrary to the spirit of our criminal law, the presumption of innocence is reversed ; the burthen is laid on the accused to prove that which the prosecution must, in the ordinary course of English law, establish.

This Act, as we all know, was the outcome of the complaints of the United States Government as to the defects of our neutrality law, in allowing the escape of the "Alabama." The sequel of the controversy is curious. The English Act of 1819 (59 Geo. 3, c. 69) was based on the American Statute of 1818, but was, in several respects, more stringent. An eminent American lawyer, Mr. Bemis, has enumerated no fewer than ten points in which the English Statute of 1819 is more rigorous than that of the United States. As I have already explained, the Statute of 1870 still further increased the stringency of English law. But no change of any kind was made in the United States Statute. The consequence is that many things punishable here are not so according to American law, and, indeed, I might add, under most other legal systems also. The fitting out of a vessel under circumstances similar to those under which the "Alabama" was fitted out, would not be an offence under American law ; it would certainly be punishable under the present English law. The essence of the offence, according to the American Statute, is an intent formed in the neutral State to fit out, arm, etc. ; the knowledge or belief on the part of the builder that the vessel which he constructs will be used against a friendly Power will not suffice for a conviction ; such belief makes him no more a criminal than is a gunsmith who sells a pistol with good reason for believing that it will be used unlawfully. It is otherwise according to the more rigorous English law ; reasonable ground of belief is the gist of the offence. The English Act includes under "military service" military telegraphy. The American Statute does not expressly or by implication include anything of this sort. The more severe standard may be the right standard, but it is remarkable that we should voluntarily take on our shoulders, for the benefit of others, burthens which they do not choose to bear.

Our magnanimity—I can scarcely say our prudence—goes further. As you are all aware, our Government undertook, by the Treaty of

Washington of 1871, to observe in the future three rules then formulated, and to bring them to the notice of other countries. We are required to "use due diligence to prevent the fitting out, arming or equipping within its jurisdiction any vessel which it (England or the United States) has reasonable grounds to believe is intended to cruise or carry on war against a Power with which it is at peace ; and also to use like diligence to prevent the departure from its jurisdiction of any vessel intended to cruise or carry on war as above, such vessel having been specially adapted in whole or in part within such jurisdiction to warlike use." Secondly : "Not to permit or suffer either belligerent to make use of its ports or waters as the base of naval operations against the other, or for the purpose of the renewal or augmentation of military supplies of arms, or the recruitment of men." Thirdly : "To exercise due diligence in its own ports and waters, and, as to all persons, within its jurisdiction, to prevent any violation of the foregoing obligations and duties."

No other nation has adopted these rules. Many jurists treat them as unreasonably onerous to neutrals.¹ But the proclamation of neutrality of last month, unlike the proclamations issued in the Russo-Turkish and Japan and China wars, recited these rules and enjoined all subjects to obey them. I am inclined to think that the Act of 1870 and the rules of 1871, properly understood, do not go beyond what is reasonable ; the theory that one State can never be responsible for the conduct of its subjects to another State, cannot be maintained ; neutrality which does not conform to the three rules fairly understood, may be very offensive. But it is more heroic than prudent to admit the existence of these duties without insisting on or asking for reciprocity, or giving some explanation of the sense in which we understand them.

The only occasion on which these rules were construed—at the Geneva Arbitration—they received an interpretation which every English lawyer repudiates ; an interpretation which would make neutrality as burthensome as war itself. Is it not rash to bind ourselves to a form of words which arbitrators will probably, in the future as in the past, interpret to our disadvantage ? The preamble of the Declaration of Paris states "that maritime law in time of war has long been the subject of deplorable disputes ; that the uncertainty of the law and of the duties in such a matter gives rise to differences of opinion between neutrals and belligerents which may occasion serious difficulties and even conflicts." Such differences and disputes are more likely to be multiplied than diminished by promulgating rules which will receive as many meanings as there are interests concerned.

In recent wars in which maritime operations have been carried on on a large scale, the chief controversies have turned on the duties of neutrals to belligerents. Perhaps at no distant date the other side of the question, belligerents' duties to neutrals, and "the high privileges" of the latter, to use Lord Stowell's ironical phrase, will be studied more than they have been, at all events in this country, the traditions of which have been in favour

¹ See *Revue de Droit International*, 1897, p. 189.

of magnifying the rights of belligerents. It is well known that the late Lord Kingsdown, on whom fell during the Crimean War the chief burthen of deciding on appeal prize cases, was of opinion that Lord Stowell had pressed too strongly the rights of belligerents; and Lord Kingsdown sought to moderate those doctrines. The events of the last few weeks suggest several desirable modifications in the interest of neutrals. A neutral must be prepared to put up with many inconveniences from operations conducive to the termination of a war. He cannot fairly murmur, for example, if contraband intended for the use of one belligerent be captured by the other belligerent. But it is plain—and the events of the last few weeks remind one of the fact—that the present usages of war permit of acts which may profoundly injure the neutral without perhaps greatly aiding the belligerents or conducting to the close of hostilities. Recalling the effect on the price of wheat here and elsewhere, the far-spreading consequences of the rise caused by vague alarms of capture, conceive what would follow from a blockade, maintained even for a few weeks, of the chief American ports. Suppose that in a war between Germany and Russia, the ports of the latter were sealed, and that no wheat from Russia were procurable at a time when harvests in America and other countries usually supplying us with wheat were bad, would all neutrals consent to starve in order that the ring might be kept for the combatants and the game of war be played out in the good old way? Would not such a strict assertion of the laws of war by belligerents become unendurable by neutrals? For the common benefit of civilisation, the maintenance and use of certain machinery, plant, and services are necessary. Such, for example, is the free passage at all times to the ships of all nations through an interoceanic canal such as the Suez Canal, which has accordingly been neutralised. The working plant of the modern civilised world includes many other things, notably mail-steamers and telegraph cables; and as to these a serious conflict between the interests of neutrals and belligerents seems imminent. A mail-steamer conveying part of the correspondence of a whole continent meets with the cruiser of a belligerent. Is she to be stopped, taken into a port of the belligerent, her cargo rummaged, some of it confiscated, her mail-bags broken open and the letters examined? All that is within the rights of the belligerents as laid down in books; and a weak neutral would no doubt put up with such acts. A strong neutral might make their repetition a *casus belli*.

The treatment of submarine cables in time of war is a still more difficult and important question, and one as to which international law has so far failed to give any clear guidance. No one can say with confidence what will be its development as to this point. In earlier wars questions arose as to the transmission of information, particularly in the form of despatches from belligerents by means of vessels of neutrals. The incidents which Lord Stowell had to discuss in our conflicts with France were such as these: despatches sent from a belligerent Government in a neutral vessel from a hostile port to a consul of the enemy resident in the neutral country; despatches from an agent of the enemy

found on board a neutral vessel going from a neutral port to a port of the enemy; despatches on board a neutral vessel from the governor of a colony of the belligerent to the government of the mother country.¹ All such despatches were viewed by our Prize Courts as contraband of the worst kind, their carriage "an act of the most noxious and hostile nature."²

These decisions throw scanty light on the problems which now confront us. In the event of a war between France and Germany, messages directing military operations in some of the colonies of the former country must be conveyed through neutral territories. Would the neutral permitting or assisting in the transmission of such messages or despatches be blamable? In view of certain authorities, such conduct would be unneutral and unfriendly. And yet what is the alternative? Is the neutral to act as censor and transmit this message and withhold that? It is alleged that in the French colony of Martinique, messages apprising the Americans of the arrival of the Spanish fleet were detained by the French authorities; and that complaints on this score have been made by the United States Government. Would such conduct be deemed a breach of neutrality? How is a neutral State to satisfy both belligerents—not to allow its territory to be used as a means of carrying out or directing military operations, and yet not pursue an unfriendly policy?³ There is, too, the question of the cutting of submarine cables by belligerents. An international convention was entered into at Paris on March 14th, 1884, for the protection of telegraphic communication by means of submarine cables. But Article 15 of the Congress expressly states that the Convention is not to interfere with belligerents' rights. Probably effectual safety against the danger here referred to is to be found in the multiplication of lines of communication. But pending extensive developments of telegraphic enterprise, it is hard to contemplate calmly the possibility of England being cut off from India or some of her Colonies, not by her enemies, but by a State professing to be friendly to her in order to injure some other State. I am not now referring to the probability that in time of war our adversary would endeavour to sever our communication with India and our Colonies. Mr. Charles Bright, the well-known engineer, in his recently-published book on submarine telegraphs, points out that:—"In the event of a great war between this country and another naval Power or Powers, it is quite conceivable that more than one of our Mediterranean cables (if no others) might be ruthlessly cut by the enemy, or our communications with Egypt, India, and other Eastern and Australasian possessions entirely broken off." The same authority adds:—"The present lines to India and Australia are as

¹ See *The Madison*, Edwards 225; *The Rapid*, Edwards 228; *The Atalanta*, 6 Rob., Ad. 440.

² See remarks of Lord Stowell in *The Atalanta*, p. 455.

³ There is a further contingency worth considering. The vessels of a subject of State A repeatedly cut a cable which is of great importance to B, a belligerent, engaged in war with C. What is the responsibility of A? This question arose in the Italian-Abyssinian War.—*Revue de Droit International*, 1896, p. 606.

follows:—*a*, Lisbon, Gibraltar, Malta, Egypt, and the Red Sea; *b*, France, Italy, Greece, Egypt, and the Red Sea; *c*, Germany, Austria, Turkey, Russia, and the Pacific Coast; *d*, Lisbon and the West and East Coast of Africa. All these routes pass through foreign countries, and could at once be interrupted in time of war."

Such a risk is one to be faced if we go to war. The peril which I suggest will arise when we are at peace. The reasoning to be found in the books on the subject of intercepting information likely to be useful to an enemy is not applicable to modern methods of communication. In the case of the "Caroline," Lord Stowell laid down the broad principle: "It is the right of the belligerent to intercept and cut off all communication between the enemy and his settlements, and, to the utmost of his power, to harass and disturb this connection, which is one of the declared objects of the ambition of the enemy (France) to preserve"; an excellent principle, if in injuring a belligerent no great harm be done to an innocent neutral; a questionable principle if in carrying it out an innocent neutral State is grievously wounded.

I do not venture to offer a complete solution of a difficult problem; perhaps none is possible. But it seems to me that in any satisfactory convention should be an article binding the signatories not to cut or injure cables connecting countries with their colonies or dependencies.

That the strict enforcement of belligerents' rights, as laid down in text-books, would be here ruinous to neutrals; that the new international law slowly disengaging itself from precedents and traditions must here as elsewhere take greater notice of the interests of neutrals,—that is the reflection with which I end.

Major-General J. B. STERLING:—The lecturer has given us a lecture so full of meat that it requires most careful consideration and digestion; and in the limited time that is allowed, I think wisely, by the rules of our Institution, it is well for an individual speaker to touch on only one point in the hope of receiving further elucidation on a very difficult matter, and, it may be, a very serious one. The lecturer said that belligerents up to date have considered the interests of neutrals. Now I am not responsible for the statement that has appeared in the papers, which may or may not be true—but it is certainly possibly true—that the submarine cable between St. Vincent and St. Lucia, two English colonies, has been cut by one of the belligerents, probably the Spaniards. The point is deserving the most anxious consideration. If that is allowable by international law there is no possible reason that the Atlantic cables from Valencia to Halifax should not be cut by the same Power. There is no difference of position between that and the cables from Gibraltar to Malta. I entirely leave apart the question of cables that touch other people's ground. Of course, the most difficult nut to crack is the question of Marseilles, where there are sixteen cables running out, all belonging to different nations, interlacing one with another; and one of the people employed in the actual repairing of those cables told me he frequently did not know which he had got hold of. But there is the case that between two English colonies, merely for a tactical or strategical advantage, to prevent the passage of one of the fleets past our colonies being signalled, the British cable between two of our colonies, neither end touching on territory of one of the belligerents' colonies, has been, according to the statement, cut. I think it would be most valuable if our lecturer, who has considered so many portions of the subject-matter of

this discussion, later on in his answering remarks, would give us some elucidation on this, which is a most grave and important question.

H. F. WYATT, Esq. :—In the extremely interesting paper with which we have been favoured this afternoon, there is one particular point to which I would venture to draw attention. The lecturer spoke of the Declaration of Paris as having taken place under somewhat mysterious circumstances. Certainly that is true; but in order to understand the new departure which the Declaration of Paris presented, I think he should have gone back two years. He should have gone back from May, 1856, to the evening of the 28th March, 1854, for upon that evening was published a supplement to the Official Gazette, in which was inserted an announcement by the Government that neutral ships would cover enemy's goods. That announcement, which was styled an Order in Council, did not have appended to it the usual words at the end, "By order of the Queen," and being styled an Order in Council it was styled what it was not, for there was no meeting of the Privy Council between the 8th March and the 29th March. So that the origin of the suspension of the right of capturing an enemy's goods in neutral ships by England is shrouded truly in the deepest possible obscurity. It is a vital point in English history at the present time, it is a point which remains uncleared up, and which will be cleared up by some future historian; but I hope that for all our sakes it will be cleared up soon. We all know that up to the 28th March, 1854, it was deemed by England an essential part of its equipment in war that it should have the right to seize enemy's goods in neutral ships. We know, as Mr. Macdonell pointed out, that we fought a great war in 1801 in order to ensure the permanence of that right, that we fought the armed neutrality league, and that we bombarded Copenhagen. It is very noticeable that by the exercise of this right we brought Russia to her knees in that campaign (of 1801) without any actual attack on the Russian fleet. The attack on the Russian fleet which Nelson wanted to make at Revel and at Kronstadt was not necessary. Russia was brought to her knees without it, because her commerce ceased. Coming to the present moment, we have to bear in mind that Mr. Chamberlain has recently said—and foreign papers have taken notice of the declaration—that if we had fought Russia about China we should have had no weapon by which to bring her to her knees. I venture to suggest to you that we had a weapon, and that the weapon was that the use of which was suspended by us in 1854 and abandoned by us in 1856; and that had we recently gone to war with Russia, and had we power to exercise this right of searching for Russian commerce in neutral bottoms, we could bring Russia to her knees in six months—we could checkmate her designs in Asia, we could defend the frontiers of India, and make ourselves, and not the Russians, predominant in China. At any rate, the lessons of our history distinctly teach this. As against that, Mr. Macdonell observed that we should lose very much by insisting upon the right we previously fought for, that we should lose the power of importing goods freely into this country during war, and we should lose the power of importing food. Well, but consider, how should we import the food from the foreign countries? We could import it only by giving up the carrying trade ourselves.¹ We cannot afford to give up the carrying trade ourselves. Commerce is the vast part of the means by which this country earns its living; and it is a gigantic change to contemplate, that we should allow the whole carrying trade—including, that is to say, the carrying both of the goods coming into this country and the goods going from this country—to pass from us in time of war. In the second place, the goods taken from this country could not be carried in foreign ships, for the simple reason that foreign ships to carry them do not exist. Our mercantile tonnage amounts to more than half the mercantile tonnage of the world. The

¹ Since, by the hypothesis, our commerce would be carried on under neutral flags.—H. F. W.

other aggregate shipping of the world would be insufficient to go on maintaining the trade it does now and to do our own carrying trade as well. The expedient of simply passing English ships under foreign flags the lecturer showed to be impossible, owing to the fact that such transfers would not be looked upon as legal by foreign States. So that we come to this position, that the *quid pro quo* for which we are giving up this right of capture does not exist, that we are giving it up for a chimera ; there is nothing substantial which we get in return. We could not afford to give up our carrying trade, and it would be impossible for us to do so in the actual event of war ; but we are giving up a weapon by which in former wars we were able to take full advantage of in our maritime strength. It is objected that it is contrary to natural law to make war upon private property, but really the exercise of the right of capture is simply upon these lines—that you prevent the neutral from extending his trade to your detriment. You do not interfere with the ordinary or natural trade of the neutral, but you prevent him from extending the ordinary limits of his commerce in a manner which would be detrimental to you. Throughout our history, with the single exception of the Treaty of Whitehall, made on August 12th, 1689, we always construed our rights in that fashion. We merely want to prevent the neutral Power from extending his carrying trade, and so helping our adversary, the rival belligerent. This point is one of supreme importance to this country, in fact, it governs probably the whole future of the British Empire. If we do not make use of that right we are doomed to defeat in Asia at the hands of Russia ; if we do make use of it, in all probability Russia is doomed to defeat at our hands. It was Mr. Richard Cobden who saw the full effect of the exercise of the right of capture by ourselves. He said, "It is clear that Nature herself has doomed Russia to a condition of abject and prostrate subjection to the will of the maritime Powers." That is a strong expression of the conditions, but it seems to have been borne out by the effect of our war in 1801, and at any rate, it has to be borne in mind that this right of capture was given up in a most mysterious and unauthorised manner in 1854. It was suspended against the representations of a deputation of British merchants at the time who waited at the Foreign Office, and were told by Lord Clarendon that the ministers recognised the force of their arguments, but that they felt they must give up the right because of the hostility of Prussia to its exercise. Finally it was abandoned, or temporarily abandoned—I hope only temporarily—in 1856, without authority of any kind ever being produced. The Queen has, from that date to this, *persistently refused to sign the Declaration of Paris*. It has never been ratified by Parliament, and it remains a monstrous exercise of authority by men, Lord Clarendon and Lord Cowley, who were empowered to do one thing and did another.

Mr. F. W. RAIKES, Q.C., LL.D. :—One has heard a great deal about the difficulties and about what has happened with regard to the Treaty of Paris. It seems to me, if I may venture to say so, that what has been the misfortune of this country in this case, and what is likely to be the misfortune of this country in another case which I will presently allude to, is that we are in the unfortunate position of halting between two opinions. This country, the greatest naval Power on the face of the earth, was justified in endeavouring to enforce maritime law with its utmost strictness ; this country, as the greatest mercantile Power on the face of the earth, is most keenly interested in the ocean being free to merchant-ships at all times. Therefore, on the other hand, you have what we may call the military and naval part wishing to preserve the laws of war in their strictness as they were in 1756 ; while, on the other hand, you have the mercantile community wishing to adopt the plan which the Americans wished to adopt in 1856, which, if it had been adopted, would have placed merchant-vessels under an arrangement, not exactly the same as the Treaty of Paris, by which property would have been as free from capture at sea as it is on shore. Between those two we have given up the one which was useful to us as a great naval Power, and we have not got the other which would be useful to us as a great mercantile Power. Now, Sir, in

more recent times, and since the war with Russia, coal has become the factor of the very utmost importance in naval warfare. Hitherto, until to-day, the worst wars which have been fought have been land wars. Whether the American civil wars or those between Austria and Prussia, Germany and France, Russia and Turkey, Turkey and Greece, they have been fought by countries with a long land frontier, and all the great operations of war have been carried out on land. Therefore, when a belligerent man-of-war has come into a British port, this is what happened : a belligerent man-of-war is not a very pleasant neighbour, and one would like to get rid of her as soon as one can, and it was thought, and agreed, among the nations generally, that the fairest and best way was to say to every belligerent man-of-war which came into your ports, when you were a neutral, "We will give you just enough coal to take you to your nearest port, and nothing more." The rule worked fairly well ; the ports of the country were not very far from where they got their coal, and they only got enough coal to go home, so that they could not pursue any operations of war on their way—they had to go straight. That was fair to both sides. But, unfortunately, that which was very fair in land wars has been adopted as a precedent and is now being put in force in a maritime war in a way which I venture to think is in the immediate present most detrimental to this country—most detrimental to every neutral. If, indeed, we were the only nation on the face of the earth except the belligerents, we might well afford to let them fight out their battles between themselves, and when we said, "We will only let you have coal enough to go home with," it would be only coal enough for them to go home with, and the ships which got it would have to go home, even if they had to cross the Atlantic. But we are not the only nation in the world, and it seems to me that the result of giving a ship enough coal to take it home when there are other nations who also have ports, is to enable a ship to obtain coals to carry on the operations of war. Without the coals they can do nothing ; with coals they can do everything—it makes the whole difference to them. With regard to the action of the American fleet in Manila Harbour, which one must look at certainly as being a very considerable achievement, if it is followed up, as it is likely to be, by the destruction of Manila itself, that must necessarily mean a very grave injury to neutral property, to British property, and property belonging to other neutrals in Manila. I do not suppose there is a sea-coast port on the whole face of the earth where, if it were bombarded, injury would not be done to British property and to all neutral property. And we supply the means of doing it by giving the ships enough coal to take them home. If Admiral Dewey's fleet had not been able to take coal in at Hong-Kong they would never have ventured to go to Manila at all ; they could not have gone there with empty bunkers. What is more, although having once coaled at Hong-Kong they cannot get any more coal in a British settlement for three months, yet Hong-Kong is not the only place out there. There is Saigon, belonging to France ; Macao, belonging to Portugal ; Batavia, belonging to Holland ; Formosa, now in the hands of the Japanese ; and the whole coast of China itself—half-a-dozen different places, and yet every one of those different nations adopts the same rule as we are doing. After an engagement you have only to go into another place, fill up your coal bunkers again—enough to take you home across the Atlantic to San Francisco, and, instead of going there, pursue the operations of war for another three months ; and then you can run the gauntlet all round the places again, and so you go on. The result of that is that the further away you are from your base the better for you. You have nothing to do but to send the coals out to meet you in some neutral port, fill up your bunkers there, and take care that you do not go into the same port again, and you can carry on the operations of war *ad libitum*. You are doing it by the action of neutrals who are injuring their own property and their own rights by putting the enemy's ships in the position of being able to bombard the towns and destroy neutral property which they find there. I say that

is a very dangerous condition of things, and it would be a far better thing—and I do not see that there is any principle to prevent it—if there was an agreement amongst all neutral nations—and of course in almost every case the majority of nations are neutral, and therefore are the people to decide the question—that in no case would they give a belligerent ship one single ounce of coal when they entered their ports unless it was enough to boil the kettle and cook for the men. But what is the fact? You say, "We cannot allow you to take ammunition, powder, or anything to pursue warlike operations," and yet you give them the thing without which all their powder and shot and everything else would be absolutely useless—you give them the one thing needful to enable them to carry on the war; and what must be the result? The result must be injurious to every neutral who has property scattered about all over the world, and more injurious to England than to any other country, because her property is more widely scattered and diffused all over the world. Where a similar state of things exists on land what happens? On the 1st February, 1871, General Bourbaki's army could not keep their ground. They had to cross the frontier and go into Switzerland, and before the Swiss would give them a meal they required them to lay down their arms and be useless for the rest of the war. What is the difference in principle between that case and that of a belligerent ship which cannot keep the sea because she has no means of moving, and where she has to go into a port of a neutral? But instead of saying, "No, we won't give you coal; we will allow you to go out again, but we will not give you coal," we practically say "Here is your coal, take it and proceed with your operations, but go somewhere else next time, and do not come again to an English port." It seems to me that in principle there is no difference at all. The only thing was that in former days of course what the belligerent ship wanted when she came into a port was provisions, she wanted something to feed her people with, and she was in hard straits. She wanted food, and that we gave them, and away they went with it. And so the principle arose that they were treated somewhat differently from troops coming on to the land of a neutral. But when it comes to giving them something which is the most important of all things for their warlike operations, it seems to me that the true neutrality is to be fair to each side alike, and say, "No, as far as we are concerned neither of you shall have one single ounce of coal if you come into a British port."

Mr. J. MACDONELL, in reply, said:—I have very little to say in reply to the observations which have fallen from the gentlemen who have addressed the meeting. There have been various classes of speakers. There have been " neutrals," and " benevolent neutrals," and " armed neutrals," but I do not think that in the discussion there has been any belligerent; so that really I have little to say in answer to the criticisms which have been made upon the observations which I have addressed to you. With respect to the point made by the first speaker, I agree with him that it is at the present moment a critical and momentous question. I should not like here to endeavour to propound any definite and detailed scheme with respect to an alteration of the Convention of 1855, but I do think that Article XV. is based on a misconception. It seems to me that Article XV. is very much like what would be the state of things if two persons engaged in a quarrel said to a neighbour, "It is necessary, in order that we should fight this quarrel out, that we should burn down your house." The third person might very fairly say, "I am not interested in your quarrel; I object to my house being burned down; and if you do what you say I shall resent it, and take part in the quarrel." Article XV. has, it seems to me, been evidently prepared by persons—and it was pardonable to prepare it in that spirit in 1855—who had not present to them the dangers which we now find are real and living. The second gentleman who addressed the meeting said that a cloud of mystery hung over the Declaration of Paris of 1856. That is to a certain extent true, but I might call his attention to the interesting memorandum to be found in the appendix to the Neutralisation

Commission Report, where he will find some clue to the motives which led to the promulgation of the principles of the Declaration of Paris of 1856. In my own view, the real key is to be found in certain ideas which Napoleon III. at that time had very much at heart. I fail to see clearly the validity of the criticisms which he made upon Article II. of the Declaration of Paris. He stated that, in his view, had we adhered to the ancient principle of our maritime law it would be competent whenever we happened, if we ever did happen, to be at war with Russia, to "bring that Power to her knees." I fail to follow that criticism, because, thinking over the facts of the matter, I do not see how by applying the old principle we could seriously injure Russia. In the first place, her foreign trade in the past has never been great; in the second place, her foreign trade now is not large; and in the third place, if it were much larger than I imagine it is, in all probability that would take place which we know, in point of fact, did take place in the war with her, that the goods which, in the ordinary course of things, would have found their way by ships into Russia, would find their way through Germany and otherwise without very much alteration in the volume of the trade to Russia. Her trade would be diverted but not necessarily diminished. Time will scarcely permit me to go into many other interesting points which have been raised; but I would say, in answer to Mr. Wyatt, that however excellent the ancient principle might be, it is to my mind—and I notice that that is the opinion which is gradually spreading—impracticable to resort to the old principle. I was very much struck by Dr. Raikes' interesting and, if he will allow me to say so, exceedingly original suggestions. I see great force in what he says. I admit that in some respects stopping the coal supply would be as likely as anything to stopping a war. But I hardly think that the scheme which he has promulgated upon this occasion would prove a working scheme. I hardly think it would obtain general assent. I see, too, some instances in which it would work grave injustice. Ships which were in distress, ships which were in real want of coal, might be placed in a very awkward predicament by the proposed rule. Furthermore, it would operate as a preferential policy in favour of some Powers, and would be very much to the disadvantage of others. A Power which had coal stores and coal bases all over the world would profit very much by this policy, and I am afraid that if the idea were presented to other Powers less fortunately circumstanced, they would merely say:—"We see the cloven hoof; this is one of the many instances in which, as in the past, England has cloaked her own private interests under some specious and illusory phrase."

The CHAIRMAN (Sir R. Giffen):—I am sure that I may say to Mr. Macdonell, on behalf of those present, that we have listened with great interest to his paper. As General Sterling remarked, there is a great deal of meat in it, and we have had a great deal to think about. The discussion has also been of such a character as to show there are a great many points in it for consideration. We must hope that a great deal of what has been said, both by Mr. Macdonell and by others, in the discussion will be considered in the right quarters. No more important paper could have been brought before us at the present time.

THE ORGANISATION AND CONTROL OF TRANSPORT IN THE FIELD.

*By Captain ASTLEY TERRY, A.S.C.,
Esquire of St. John of Jerusalem (Commanding Army Service Corps,
Guernsey and Alderney District).*

Tuesday, May 24th, 1898.

Colonel LONSDALE HALE, late R.E., in the Chair.

The CHAIRMAN: I have great pleasure in introducing to you Captain Terry, of the Army Service Corps. The Council, while on the one hand they are very glad that you should hear in this Institution officers who can give us in their lectures the benefit of age and experience, on the other hand are very desirous of encouraging the younger generation of officers to come and put forward their views, because it is from the younger generation of the officers and not from the older generation that fresh views and fresh thoughts can be gathered. Therefore, on this occasion I have, as I say, special pleasure in introducing to you an officer of the younger generation.

LECTURE.

IN an interesting paper which appeared in the December number of the JOURNAL of this Institution, Colonel Mark Bell, R.E., claimed—and I think rightly claimed—the title of “The Fourth Arm” for the Royal Engineers.¹ I am firmly of opinion that the train of an army, with us the Army Service Corps, is of such vital importance in modern warfare as fully to entitle it to be called “The Fifth Arm.”

Although this name has suggested itself after the appearance of Colonel Bell’s paper, the subject of which it treats is of maturer growth, the outcome, in fact, of some years’ study of transport in the field.

It will not, I think, be denied that the difficulties of supply and transport in war have increased enormously in recent times; that is to say, the amount of *impedimenta* essential to the efficiency of an Army is proportionally much greater than it used to be. This fact, it seems to me, may be attributed to two main causes:—

- i. To the growth of science as applied to the art of war, which has not only replaced the rude weapons of our forefathers by others of complicated and delicate mechanism, but has so altered the methods of fighting as to render a modern campaign a far greater strain on the human machine than in the days when a stout heart and a strong arm were the only qualifications required of a soldier.

¹“The Fourth Arm.” By Colonel Mark S. Bell, V.C., C.B., R.E., A.D.C., p.s.c. (Commanding Royal Engineer, Western District), Fellow King’s College, London.

ii. To the spread of civilisation, which has reduced war to a great game in which certain fixed rules must not be violated, and which forbids armies to lay waste a country in which the inhabitants offer no resistance.¹ Our armies can no longer live from hand to mouth at the expense of a defenceless population. We can use the resources of a country, we can by purchase and by requisition take anything which is not absolutely indispensable for the immediate requirements of the inhabitants; but we may no longer treat the individual as an enemy to whom no mercy is to be shown merely because we happen to be fighting against his fellow-countrymen.

Much more is now demanded of the soldier than formerly; if not in actual bravery, at least in those qualities which make even a greater demand on his moral and physical condition. Therefore he must be well cared for and well fed, must be provided with hundreds of articles necessary to keep him efficient, must be nursed when sick, and must be treated, in fact, in a manner which to his predecessor of a couple of hundred years ago would have appeared positively luxurious.

I am speaking, of course, only of war as waged between civilised nations; and it will be convenient to state here the limits within which I propose to confine myself in this paper.

To begin with then, I am only going to consider the case of war with another great Power, in which the work of the Army Service Corps will necessarily be entirely different from what it is in our numerous "little wars," waged for the most part against savage foes, in trying climates, and necessitating special organisation to cope with special conditions. These "little wars" are of such frequent occurrence that a large number of the officers of the Army Service Corps have served in one or another of them, and it would be presumption on my part to attempt to theorise on a subject of which, from practical experience, others are so far better qualified to speak than I. The knowledge gained by the individual in such campaigns is of the utmost value; but the Army Service Corps as a body is not employed, and the subject therefore does not fall within the limits I have here set myself.

When we consider the case of a big war, however, matters are altogether different. Colonel Furse² says:—"The system of victualling entirely from the base, the only possible one in our small wars, is no school for the large supply operations of European warfare." We have not fought a European Power since the Crimea, and I fear the lessons to be learnt from a study of that campaign are of a negative character. We must go back then to Peninsular and Waterloo days for examples of the work of the train in war; but those days are long past, changes almost revolutionary in their character have taken place since; and consequently we find ourselves, to all intents and purposes, in the dark as to the course to be followed in

¹ Except in a friendly country when it is absolutely necessary to prevent the enemy obtaining supplies, as was the case before the Lines of Torres Vedras.

² "Military Transport." By Lieut.-Col. George Armand Furse, D.A.Q.M.G.

the future. It is true that we can derive much valuable information from studying the campaigns of other countries, notably that of 1870-71. But apart from the fact that the war between France and Germany is fast becoming ancient history, we have to remember that our transport and supply organisation necessarily differs from the German in several particulars. Hence, we must base our methods to a great extent on theory, and endeavour by constant study to arrive at the truth.

In the second place, I am not now concerned with the various kinds of transport which fall outside the control of the Army Service Corps proper. I mean transport by railway, by river, by canal, or by sea. The consideration of these would take far too long to be adequately discussed in the time at my disposal this afternoon.

Again, transport in the field may roughly be divided into two parts, usually known for the sake of convenience as First Line and Second Line. The work of the latter is carried on well in rear of the army, safe from any attack by the enemy, and in great part at least by civilians under proper supervision. This again falls outside the scope of my paper.

It is the first line of transport, then, that I call the "Fifth Arm," and it is of this part only that I propose to speak this afternoon.

There is happily no need to insist on the fifth arm being entirely a military body; the necessity for this is now universally admitted for the following reasons, viz. :—

- i. Strict discipline is absolutely necessary, and cannot be properly maintained among civilians.
- ii. The commander of an army must have the same absolute control over the transport as he has over the other arms.
- iii. A sudden panic is less likely to occur, and if it should it can be more easily checked.

But to my mind there is a more important point still, and I cannot do better than again quote Colonel Furse. He says:—"A military transport has the further advantage of securing a reserve of trained men in the hour of need (with us a point of considerable importance). Here we have in place of a source of weakness an accession of strength which often we cannot otherwise easily procure. In place of having to guard and protect a host of helpless followers, if we can secure nothing else but their own defence and that of the animals and material under their charge, dispensing with numerous guards which can be more effectively employed elsewhere, and which our small armies can spare with great difficulty, something will be gained."

This brings me at once to a question of the first importance, viz. :— Is the Army Service Corps as at present constituted capable of self-defence?

To find the answer to this question it is only necessary to take up the mobilisation tables,¹ and look at the strength of a company on service,²

¹ See "Manual for Field Service, Army Service Corps."

² It will be noticed that the companies vary in strength according to the nature of their duties.

or rather at the proportion of men to horses. It becomes at once apparent that the number of spare men¹ is quite inadequate to defend those employed as drivers, who cannot possibly be taken away from their animals to assist in repelling an attack. Moreover, it must be remembered that all the men shown as privates are butchers, bakers, or clerks, who will of course be required for their own special duties, and who cannot be employed as fighting men, because, firstly, they are widely distributed, and, secondly, because casualties amongst them would speedily reduce their numbers below the minimum required, and so seriously cripple the resources of the Army. We must therefore take the numbers of the transport men only. The 1st Army Corps requires 16 companies, which give a total of 1,922 drivers, and 3,270 draught horses. If we allow one driver to every two animals (a low estimate, because there are a certain number of one-horse vehicles and pack animals) we find there are just 287 spare men. Again, for a certain line of communications there are 5 companies allotted,² which give a total of 615 drivers and 1,000 horses; that is, 115 spare men. So that altogether 21 companies on a war footing only produce in round numbers some 400 spare men, an average of 19 men per company; or put in another way, the proportion of spare men to the total strength of a company is on an average about one in six. On a peace footing the proportion is about two in three, which is better; and yet, as every officer commanding a company knows, the number of spare men allowed barely suffices to carry on the ordinary routine duties in barracks! We may safely assume therefore that the 19 spare men per company is the minimum number that will be required in war for carrying out the necessary duties, and that they will not be available for fighting. It does not matter how many companies or parts of companies may be united in any one convoy,³ the relative proportion of spare men to drivers will remain practically unaltered.

But, it may be asked, is it necessary or even advisable that the Army Service Corps should be able to defend itself; and if so, to what extent? Would it not be better to entrust its defence entirely to the other arms? At present, if peace manoeuvres are any guide, the last question will have to be answered in the affirmative; but this, I take it, is because the companies are not strong enough to conduct their own defence.⁴ As a general rule the attack and defence of convoys is but little practised, presumably because it is considered that the other arms can be more profitably employed; and hence the fact that in nine cases out of ten—I speak so far as my own experience goes—the Army Service Corps is declared neutral, and therefore derives no benefit from the

¹ All the transport men of an Army Service Corps company are trained as drivers. I use the term "spare men" to denote those who are not in charge of animals.

² Exclusive of one dépôt company.

³ I use the term "convoy" not in its usually restricted sense, but to express any portion of the first line of transport.

⁴ There are 34 drivers and 13 pairs of animals in a transport company on a peace footing.

tactical lessons of the manœuvres. Another reason for this is doubtless the increased comfort conferred on the troops generally by their supplies reaching camp in good time without let or hindrance.

I submit that all this is a great mistake, because it is not what would happen in war when in contact with the enemy. Our system, during manœuvres, of operating from standing camps must bear the chief blame, though this, no doubt, is owing to the necessity for cutting down expenses ; and, moreover, the peace strength of the Army Service Corps is so small that unless the plan of standing camps be adhered to the number of troops engaged would have to be considerably reduced. The truth of the matter is, that on peace manœuvres the Army Service Corps is not employed as the train of an army in the field, but that all its energies are devoted to keeping the troops supplied with the actual necessities they require, quite irrespective of tactical considerations. It will scarcely, I think, be maintained that this is the best possible training for war.

Peace manœuvres, then, cannot be considered a safe guide ; as a matter of fact there are weighty reasons why the Army Service Corps *should* be numerically strong enough to undertake its own defence. They are :—

- i. The commander of an army will not have to make elaborate arrangements for the safety of his supplies, and will thereby be saved much trouble and anxiety. It is true that his lines of communication will still require troops of the other arms for their defence, but the numbers of such troops will be capable of considerable reduction.
- ii. No men need be taken from the fighting line to march with the baggage and supply columns, and consequently the efficiency of the Army will be considerably increased.
- iii. The escorts being composed of drivers will be far more useful than infantry soldiers possessing no knowledge of horses ; and the convoys will be homogeneous, which in itself is a great advantage.

Now, to what extent should transport of the first line be capable of self-defence ? As I understand the matter, the troops told off to protect a convoy will be divided into two bodies. One, the most numerous, composed of infantry, cavalry, and, as a rule, artillery (a miniature army) will manœuvre at some distance—two or three miles, probably—from the convoy ; and will form in fact a covering screen, through which the enemy should not be able to penetrate. This body, for want of a better name, I call the convoy "guard." The second body, which I call the convoy "escort," will march with the convoy, and will consist chiefly of infantry, with a small party of cavalry as scouts. The escort should be capable of beating off any parties of the enemy that may elude the guard ; and, as we have seen, should consist entirely of men of the Army Service Corps. Wherever in the course of this paper I speak of the defence of a convoy, it must be understood that I refer only to the convoy escort, and not to

the convoy guard; for with the latter the fifth arm has really nothing to do.

We have now arrived at two definite conclusions:—

- i. That convoys in war cannot (as the Army Service Corps is at present constituted) defend themselves.
- ii. That within certain limits they ought to be able to do so.

The further question at once arises:—How is this desirable result to be brought about?

Three main conditions must be satisfied, viz.:—

- i. The number of spare, *i.e.*, fighting men, must be sufficient.
- ii. These men must be at least as well armed as the enemy; and
- iii. They must be properly trained in peace.

To determine the numbers required to carry out a certain fixed undertaking is by no means easy; but when the conditions are ever-varying, as in the present case, the difficulty of arriving at a positive conclusion is enormously increased. Peace manœuvres, as we have seen, are no safe guide: examples taken from actual warfare are not much better, because the strength of the escort must necessarily vary according to the nature of the country and the proximity, strength, and character of the enemy. It is not to be expected that England will maintain in peace, even including reservists, the maximum number of spare men which military history tells us has been, and so may be again, required to protect a convoy. Therefore the escort must, in special cases, be augmented by the other arms. But, on the other hand, the nation may reasonably be asked to furnish more than the bare minimum; in order that, as a general rule, the numbers may be adequate without additional aid.

I suggest that, as a tentative measure, the proportion of men to draught horses in a transport company on a peace footing be fixed at two to one. This would necessitate adding 18 men to each company, that is a total of 612 additional men to the Corps.¹ Not a very extravagant demand surely, now that the Army is being increased, and it is remembered how weak the Corps is at present even for its duties in peace. "The conduct of convoys, and the formations to assume in case of attack, require to be carefully understood by all officers"; so Colonel Furse; and unless each company is brought up to at least the strength I have suggested, it will be impossible to practise in peace the duties which will be required in war. The number of officers too must be considerably augmented. Colonel Ward² says:—The estimate of establishment [for a line of communication] now given is calculated on a very liberal scale, and will, as a rule, on account of the scarcity of officers, be considerably reduced. That is to say, our organisation for war exists on paper only, or can only be maintained by drawing from other

¹ There are 34 Service Transport Companies.

² "Army Service Corps Duties." By Lieut.-Colonel E. W. D. Ward, C.B., D.A.A.G. Home District.

branches of the Service officers who can have had little, if any, previous training in transport duties; and at a time, too, when their regiments can least spare them. There is another strong argument in favour of increasing the number of men in a company on a peace footing. It is that the present peace establishment is so small compared with the war establishment, that on mobilisation a company would be literally "swamped" with reservists—strangers to their officers and to each other; and this at the very time cohesion and mutual confidence would be most needed.

The proportion of two men to a horse would, on a war footing, be in excess of normal requirements, and might, therefore, I think, be reduced to one man to a horse. This would give the 21 companies required for the 1st Army Corps and line of communication 4,270 drivers instead of only 2,537, the present establishment. Of these, 2,135 would be spare men, an average of about 100 per company; allowing, that is, one driver to every pair of animals.¹ This is a large increase, it is true, but surely not too large when we remember that our 21 companies would in column of route extend for at least nine miles! Of course, so long a convoy on a single road would be highly improbable; but in any case the proportion of fighting men to drivers would remain constant. A company would, roughly speaking, occupy from 500 to 1,000 yards on the march; and surely something under 100 men, a single company of infantry in fact, cannot be considered an unnecessarily strong escort, especially when allowance is made for casualties.²

I assume, of course, that the number of non-commissioned officers would be increased in due proportion—I consider the present establishment proportionally too small—so that there would be sufficient for scouting, and no cavalry would be needed. Hence, under ordinary circumstances, the train would be perfectly capable of looking after itself; and any possible jealousy between it and the other arms would be avoided.

We will suppose, then, that our transport has got the men required for its defence; and the next point to be considered is obviously how these men are to be armed, and how trained. At present the dismounted or supply men of the Army Service Corps are armed with carbine and sword-bayonet, the mounted or transport men with the carbine only. The fact that they are armed at all points to the supposition that they may, under certain conditions, be called upon to fight; and surely it is our duty to see that they shall be at least as well armed as any enemy whom they may be likely to encounter. This is not the case however: other things being equal, a man with a carbine is at the mercy of a man with a rifle, because the latter can keep out of the effective range of the former, on whom he can fire with impunity. More, once the enemy gets to close quarters, the transport man is at his mercy, having no weapon to

¹ As I have already stated, this is a low estimate; besides, many of the spare men would certainly be required for other duties. Probably, therefore, the number actually available would not exceed 70, if so many.

² I have purposely omitted all reference to artificers and batmen, because they would be available for fighting if required.

oppose to the bayonet except the butt-end of his carbine. I do not seek to belittle the carbine, it is an excellent weapon in its way; but no matter how straight it may shoot up to a given distance, it is valueless if its range be insufficient to reach the enemy. Clearly, therefore, the men of the Army Service Corps should be armed with rifle and bayonet. At first sight it may appear somewhat incongruous to arm mounted men with rifles, but this is not really so; it is simply a matter of custom. Moreover, we must recollect that the transport men of the Corps are not "mounted" in the ordinary sense of the word. Certainly the drivers ride their animals, but the spare men sit on the wagons. The present short "knife" bayonet would not interfere with a man on horseback in the least; and undoubtedly it is equally important for the transport man to be able to defend himself at close quarters, as it is for the supply man to be able to do so. At present the drivers are supposed to carry their carbines slung across the shoulder. I say "supposed," because the carbine in this position is exceedingly uncomfortable, especially when moving at the trot; and consequently except when marching to attention, the drivers invariably hand their weapons to the men on the wagons. These last carry the carbine in an upright position between the knees, in which manner a rifle could be held with equal facility. We see therefore that the only difficulty in substituting the rifle for the carbine would be to decide on how the former should be carried by the men in charge of animals. To sling it over the shoulder would be inadvisable for the reasons just given, and a bucket would be in the way. Personally I should like to see the mounted men's rifles carried under the floating raves of the wagons to which their horses are harnessed, one on each side. I cannot conceive any possible occasion in which a driver could want his rifle on the instant; in fact, I rather doubt his requiring it at all, his duty in case of an attack being to take care of his animals. In any case, the fire of a mounted man is never very effective. As the escort of a convoy must act as infantry, the spare men would have to march on foot; indeed, there would be no room for the great majority of them on the wagons. The present "knee" boot would therefore have to go; and as it is most desirable that the drivers and the escort should be interchangeable, I would give all ranks a field-boot, which personally I have always found equally comfortable for walking or riding, besides possessing the additional merit of being easy to take off and put on. I have known men sleep in their wet "knee" boots rather than face the painful struggle in the morning of having to get into them again. Spurs should be treated in the same way as leg-guards are now, *i.e.*, only worn when on horseback.

I will touch very briefly on the question of training. The men should be taught the bayonet exercise, and should be put through the same annual course of musketry (with perhaps certain modifications) as the infantry. This could easily be done, as the number of spare men in a company being increased by eighteen would enable the course to be fired by half-companies without interrupting the ordinary transport duties. Skirmishing should be practised, and great attention paid to fire discipline. The magazine rifle would be an unnecessarily complicated

weapon to put into the hands of three-years' men with a great deal to learn in that short time ; I should prefer the Metford-Martini rifle and the Dum-Dum bullet. I am not aware that such a weapon has yet been made, but it could be very easily and cheaply called into existence. I should also like to see a couple of machine guns attached to each company. They would always be useful, especially to stop a sudden rush, or to defend the corners of a laager.

There is one thing more needed to make the train thoroughly efficient, and that is facility for signalling. A few signallers disposed along a convoy on the march will be found extremely useful, and will save much wear and tear of horseflesh. Even with our small convoys on peace manœuvres I have experienced the want of a few signallers ; in the case of a big convoy and an active enemy their value would be largely increased. Silence on the line of march is often essential. Colonel Furse says :—" In all cases where noise may point out to the enemy the whereabouts of a convoy, silence should be enjoined, and the drivers should be forbidden to sing, shout, or even to crack their whips." Yet this is the very time when communication between the head and tail of the column will be most needed, and horsemen trotting backwards and forwards are certainly not conducive to silence, while bugle calls will be out of the question. Cyclists will be useful, but their presence will not make up for the absence of signallers. Sometimes, too, a small party of the Royal Engineers will be required to mend roads or repair bridges, and even occasionally to superintend the construction of hasty field defences.

We have now to consider the command of convoys in war. In the case of a convoy being entirely composed—as we have seen it ought to be composed—of the Army Service Corps, no question of command will arise, for it would be assumed by the senior officer present as a matter of course. But suppose, as at present would be the case, that the escort consists of troops of the other arms ; what then ? The senior officer, of course, to whatever branch of the Service he may belong, will doubtless be the reply. Certainly ; but that is not the point. The question is, Should the senior officer be the officer commanding the Army Service Corps—the officer, that is, who is responsible for the safety and well-being of the convoy—or should he belong to the fighting portion of the mixed force, to whom the defence of the convoy is entrusted ? Colonel Furse says :—" The officer commanding the escort and convoy should be one ; any officers marching with it, though of superior rank, should have no authority to interfere with his command." In other words, the officer commanding the convoy should command the escort also, for it is not to be supposed that the senior transport officer is to be superseded by an officer of another arm, who would necessarily lack the requisite knowledge and experience of transport matters. Nor can there be any doubt but that Colonel Furse is right. The escort is part of the convoy, not the convoy part of the escort ; the convenience of the escort, the pace at which it moves, the direction it follows, and the situation and duration of halts,—all are subordinate to the movements of the convoy. The escort

is there to fight if necessary, but it must avoid an engagement if it possibly can. The active-defensive may, it is true, be employed when an action is absolutely unavoidable, both to remove the fighting from the immediate vicinity of the convoy, as well as to avoid the feeling of inferiority which a merely passive defence would engender among the troops engaged. The officer commanding the convoy may, if he choose, when it comes to a fight, entrust the actual defence to the officer commanding the escort; but there must be no question as to the right of the former to control the formation and regulate the movements of the whole. There is always the danger of the officer commanding the escort, if he be given free scope, forgetting his true *rôle*, and seeking to subordinate the requirements of the convoy to the more brilliant but extremely dangerous achievement of fighting a miniature battle on his own account. It is painful to reflect that peace manœuvres are again at fault in this important matter; whenever I have found myself in charge of a convoy, large or small, the officer commanding the escort has invariably been my senior; and no doubt others can tell the same tale. It cannot be too strongly urged that unless we practise in peace what we shall have to do in war, disaster will follow. Why we do not invariably do so is a mystery to me, because the organisation of the Army Service Corps points unmistakably to the exercise of military command by its officers. The Corps was changed from a Department to a Regiment because the former organisation worked unsatisfactorily; the officers have precisely the same examinations to pass for promotion as their brethren of the Line;¹ majors are examined in tactics before being promoted to lieutenant-colonelcies; in fact, the intention of the military authorities is plainly that, in the general efficiency of its officers, the Army Service Corps shall be on a level with the other combatant branches of the Service.

The two chief objections to my suggestions for a self-protected train will be, I expect:—

- i. Increased expense.
- ii. An increase of non-fighting troops with an army in the field.

With regard to the first of these objections, I have shown that my suggestions, if carried out, need only add some 600 men to the peace establishment of the Army Service Corps—not a very serious burden surely, in view of the great advantages claimed for the scheme. As to the second objection, the spare men of the train would only be non-fighting in the same way as an escort of the other arms would be; and as they would set free at least as many men as they themselves number, it is difficult to see how the objection can be sustained. If the commander of a body of troops in the field—be it an army corps or be it a brigade—were asked which he would rather have, a train which could protect itself, or one which would require an escort of the other arms to ensure its safety, I do not believe he would hesitate to choose the former; and if I am right in my belief, there is no need to argue the matter farther.

¹ Besides having to qualify in their own special subjects.

What will probably strike most people when considering the subject of transport in the field, is the exceedingly complex state of our existing organisation. What with regimental transport, supply columns, bearer companies, bakery columns, field hospitals, and transport for the staffs of the various units; not to mention the further sub-division of the first line into what is always necessary, and what is occasionally required; it appears as if we were almost inviting disorder and consequent disaster. The confusion in rear of a battle-field is necessarily great whether the battle has been lost or won, and therefore we must endeavour, by every means in our power, not to add to this confusion more than we can possibly help. At present, the officer commanding an Army Service Corps company would see his company split up from the moment he joined the field army, and half his men and horses he probably would not see from the beginning of a campaign to the end. From no point of view can this be considered satisfactory; but at the same time it is most difficult to suggest other arrangements. The absolute necessity of the Supply and Transport "services" being under one control is now universally acknowledged; but while fully admitting the overwhelming advantages of such an organisation, it must be owned that from a purely transport point of view, it does not tend to simplify matters. But if the Army Service Corps could transfer to other shoulders the burden of transport duties outside its own particular sphere, so as to have to deal exclusively with supplies, that would indeed be a step in the right direction. Colonel Furse remarks:—"In advocating that the transport of an army should form a branch of the commissariat, we must make an exception with regard to regimental and medical transport." The former, as we know, is kept distinct, though it, as Colonel Ward well remarks, "when not required for work with the unit, will always be available for general transport duty." But the latter is at present provided by the Army Service Corps; yet, to again quote Colonel Furse, "the importance of a separate transport for this department cannot be over-rated." The transport duties of the Army Medical Staff differ quite as much from those of the Army Service Corps, as do the latter from those of the Royal Artillery and Royal Engineers, who have their own transport.

It is not my present intention to discuss the question as to whether the Geneva Cross will or will not protect officers and men of the Army Service Corps employed with the Medical Department on the battle-field. The matter was not very long ago argued in the columns of the daily papers, without however resulting in any positive conclusion being arrived at. Certainly the question should be settled definitely once and for all, not merely by the expression of an opinion on the part of the Government of this country, but by the unanimous decision of the other Powers. The results of uncertainty in a big war could not be otherwise than deplorable.

Personally I should like to see the question settled so far as England is concerned in another way, a way which would at the same time greatly simplify the duties of the Army Service Corps, and that is by training a proportion of non-commissioned officers and men of the Medical Staff

Corps in transport duties, in the same manner as infantry transport is trained, by attaching them for a given period to the Army Service Corps. Then on the outbreak of war the Medical Department would draw the necessary equipment from mobilisation stores, and obtain its horses either from Army Service Corps companies not immediately required for the field, or from the same sources as the Army Service Corps draws upon for its reserve animals ; and thus would be enabled to carry out its own transport duties unhampered by any possible jealousy or misunderstanding, which might otherwise arise through two branches of the Service having a finger in the same pie. This plan would have the advantage of costing the country little or nothing, and would confine the duties of the Army Service Corps within their true limits—the transport of food and supplies.

The Fifth Arm must not fall into the fatal error of over-estimating its own importance. It exists merely as a means to an end. It must not seek to dominate the operations of a campaign, but rather endeavour to facilitate them by every means in its power. Nevertheless, as it cannot perform impossibilities, it will frequently influence the strategy of a campaign to a greater or lesser extent.

It may be objected perhaps that I have taken a too militant view of the duties of the Army Service Corps, and that in claiming for the Fifth Arm a share in the manœuvres of the battle-field, if not in the actual fighting, I have lost sight of those humbler but more useful duties—the collection and distribution of supplies—to the acknowledged necessity for which the Corps owes its existence. Nevertheless I am convinced that in spite of old prejudices which die hard, and in spite of a little not unnatural jealousy in some quarters, the principles upon which I have insisted will in the end prevail.

It is not the duty of the Fifth Arm to fight, but it must be strong enough to protect itself, and it will then be far better able to carry out its special duties without interference from the enemy.

My suggestions, though drastic, will, I think, be found to follow one another in logical sequence. If it be advisable—and who can doubt it ?—that as many men as possible should be in the fighting line, it follows that as few as possible should be employed in any other capacity, on the line of communications or elsewhere. Therefore within the limits I have suggested the train of the army should be able to take care of itself ; and to effect this it must be sufficiently numerous and properly equipped.

To sum up. It has been advocated that the Army Service Corps companies should be raised to such a strength as to render an escort of the other arms unnecessary under normal conditions ; that the fact of the train being strong enough to resist if attacked will simplify the arrangements necessary for its safety ; that a relatively larger number of men can be placed in the fighting line ; that the men of the Army Service Corps should be armed with the rifle instead of with the carbine, and that greater attention should be paid to their musketry instruction ; that in the event of an escort of the other arms being required, the officer commanding the convoy should command the whole, and that to this end Army

Service Corps officers should be exercised in such commands on peace manœuvres. And, lastly, that the transport service should be simplified by giving the Medical Department its own transport in time of war.

Let it be remembered that an effective train cannot be created on the spur of the moment ; and that, to quote Major Burn,¹ "On the efficiency or otherwise of the transport depends the efficiency and mobility of the Army."

Colonel H. S. E. REEVES, C.B. (retired pay, late A.S. Corps) :—The lecture we have just had the pleasure of listening to by Captain Terry is headed "The Organisation and Control of Transport in the Field," which is a very large subject. The consideration of such a question of "Transport" covers an enormous field, and the conditions vary in different armies and countries, particularly in an Army like ours which serves all over the world. But I think in substance Captain Terry has narrowed it down really to a lecture on the transport section of the Army Service Corps and its duties. Captain Terry's main contention is, I take it to be, that the Corps should be more independent and self-supporting, in that it should be able to defend itself under normal conditions against an attack. With regard to that, I think that we must realise that it is impossible to lay down any fixed conditions of that sort. It would all depend on the strength of the attack and on the circumstances. It seems to me that the defence of the convoy and its train is one of the most serious responsibilities and cares which any general in the field can have. It is essentially a military and a fighting piece of work. The *raison d'être* of the Army Service Corps, formerly the commissariat and transport, surely is to feed the Army, and to provide it with transport, and under our present regulations a general in command of any body of troops is actually charged with the responsibility of that work himself in a very much greater degree than he is with regard to details of other services under his command. At all events, the responsibility rests on him, aided by a suitable and selected staff. It seems to me, therefore, that to lay down any rule which would hamper a general, or any officer commanding a smaller body of troops, would deprive him of a free hand, and that such conditions would be very undesirable. Captain Terry passed over lightly the smaller wars in which we have been engaged and for which our Army exists to a very large extent. He, I think, falls into a slight error in saying that the Army Service Corps as a body is not employed in those small wars. No doubt it is not often employed in the form in which we see it regimentally embodied about the streets of London or Aldershot. It depends, of course, upon the construction you put upon the words Army Service Corps. It means more than the name of a corps ; it is a branch of the Service. We may say that the Royal Engineers do this, and the Royal Engineers do that, but we do not mean necessarily that so many companies of sappers are employed. In the same way transport work has been carried out efficiently by the Army Service Corps in South Africa and in Egypt. Certain companies or units of the Corps have gone out with their officers, warrant officers, non-commissioned officers, and a certain number of men, and have formed the nucleus for the formation of transport locally best adapted to the conditions of the country in which they had to work. I should not like the impression to get about that the Army Service Corps as a body can only work abroad in the form under which we see it at home. The question of the Army Service Corps being a military body is a foregone conclusion ; it is the result of experience in war that it must be a military body to be efficient and economical. I cordially concur in the reasons which Captain Terry gave for that. With regard to their having to guard and protect their own convoys, I think all we have a right to expect is that they should be able to find their own guards. They are highly skilled men and well paid men. It is not their primary duty to

¹ "Notes on Transport and on Camel Corps." By Major D. B. Burn, 18th Hussars.

fight; their primary duty is to look after their horses, and to work very laboriously, according to their various duties; but of course every soldier in such situations should be armed in the field in order that he may be able to take part in the defence of his camp, and be of use in a general defence of places attacked. There are many instances of men having done that in South Africa and elsewhere. If not armed, a transport soldier is at the mercy of the first man who comes with a pitchfork or shovel against him. The chief thing which Captain Terry advocates is the increase of the men of the Corps. With regard to that, he advocates our going as far as having two men per horse on a peace establishment, and I think to take the field with that establishment. Well, I have been a director of transport on service, and I should be very glad indeed to have that number of trained men at my disposal; I should feel very comfortable to be able to expand my corps by having such a large number of men; but I do not see how he proposes to employ those men usefully in times of peace. I think he must remember that the Army Service Corps transport companies we see are raised primarily for war. We could get the work done a great deal cheaper probably at home during peace by employing civilian transport, but it is very necessary for military purposes to keep these men up as a disciplined body of soldiers, and therefore their services are utilised in times of peace; but how does Captain Terry propose to utilise such a large number of men? To have two men to every horse would be too much, and rather more than the country could be expected to pay for, I think. Complaints have often been made, as I remember before I retired, and it is probably the same now—as to the want of "spare" men in a company at home. I have every sympathy with this feeling. I know the time when I had the same feelings myself with regard to finding so many, what we call, "regimental casualties" for duty outside my company, but these disappear to a great extent. When a company is mobilised for war a very far larger proportion of men are put into it. With regard to defending the convoy, I think a general officer must protect his own convoy in the same way as he protects his field batteries of artillery. He would be required to protect his Royal Engineers. He must also protect his ammunition columns. He must also protect his hospitals. The same grounds which Captain Terry mentions for increasing the Army Service Corps to such an extent would apply—well, to the other arms I have just mentioned. He admits that the escort must in special cases be augmented by the other arms. That is rather giving away the system, because if you have all these men with the Corps normally, it is admitted that you require more men under certain circumstances, and it seems to me more desirable to let it be a recognised part of the duty of the fighting troops to make such disposition as the general may order for the protection of the train of the Army. I only want to add one little word with regard to the reservists. Captain Terry says:—"There is another very strong argument in favor of increasing the number of men in a company on a peace footing. It is that the present peace establishment is so small compared with the war establishment that on mobilisation a company would be literally swamped with reservists—strangers to their officers and to each other; and this at the very time cohesion and mutual confidence would be most needed." Well, we have heard a great deal of that subject lately in discussions in the Press, and that applies to a very great extent to every arm of the Service. I agree as to insufficient peace establishment for such large expansion in war, but I should like to say that my own experience is that the reservists called out from the Army Service Corps are the most useful men I have ever had to do with when I have been on service. In 1882, in the Egyptian campaign, we had large numbers of them, and they were the most reliable men we had, thoroughly useful men, perhaps all the better for having been in civil life, where many of them had been hungry and had to work very hard. They quite appreciated coming back to their own corps and comrades, and they were among the best of the rank and file of each company. If one or two things I have said are adverse to Captain Terry's contention, he will yet, I hope,

accept my congratulations on having brought this subject before us. I think it is most satisfactory that we have now in the Army Service Corps a body of officers with men like Captain Terry, young active officers, who take an interest in these questions, and bring them up for discussion. These matters are really very important, and cannot be too freely discussed, and I think that we owe him thanks for having brought the question before us.

Lieutenant-General Lord METHUEN, K.C.V.O., C.B., C.M.G.:—I wish to make very few remarks, and more so because of the valuable statements from Colonel Reeves, which were those I should have made myself. It was rather a surprise that the lecturer had not thought of that very remarkable anomaly that we have to find escorts for the Artillery and Engineers, just as we have for the Army Service Corps; and although no general likes having to detail escorts, I am perfectly certain if I were in command of an army corps I would a thousand times rather find my own officers and escorts for all these duties than leave them to the different officers in command. Again, it would be extremely hard work to expect the same men to escort transports every single day of the campaign, for there is no harder work. There are places, like Africa and India, where the conditions are absolutely different. What number of men, for instance, in a transport in India would he require to act for a transport occupying fourteen or sixteen hours of marching on a hilly pass? I may be wrong. With regard to the Reserves, I go absolutely with Colonel Reeves. More willing men I never wish to meet. Lastly, I should stultify myself in any remarks I have to make in a future lecture if I agreed with him regarding the carbine. I am one of those who, on the contrary, are inclined on some grounds to run the carbine against the rifle. The carbine shoots for practical purposes as well as the rifle, it is 2 lbs. lighter, and much easier to carry, and I undertake to say that a man with a carbine and a long bayonet will certainly hold his own against a man with a rifle and a shorter bayonet.

Captain T. W. HEATH (Supply Officer of the North London Volunteer Brigade): The lecturer has not exactly pointed out whether he is dealing with the army abroad or in England. The conditions are totally different. The defence and attack of a convoy in an enclosed country like England, where you cannot advance like you can abroad, where there are no hedges to prevent you, is very much more easy from the great amount of cover available in this country. I should like to have heard the lecturer say something of how he would deal with these matters in England, especially from the Volunteer point of view as being the Service I am mostly interested in. I am desirous of some information on that point. Still the general information we get in this paper, which I shall read again, is very serviceable. There is one point I should like to refer to. Lord Methuen rather took the wind out of my sail a little, about the rifle. I do not think any man armed with a carbine is at any disadvantage with a man who is armed with a magazine Lee-Metford, simply because in the last few years the chamber of the carbine has been made the same as the Lee-Metford, and therefore it carries the same ammunition and has practically the same range. The muzzle velocity is about 2,000 feet per second, and is the same—

Lord METHUEN:—I think the muzzle velocity is 100 feet less.

Captain HEATH:—It depends on the erosion inside of the barrel. It may be a little less, I do not mean within 100 feet. Still the short rifle loses accuracy after 800 yards, compared with the long rifle. I quite agree with his lordship in the handiness of the carbine to the man defending himself. A man can turn a short weapon round quicker than he can a long one; it is handier, easier carried, lighter, and he fires the same cartridge and therefore can inflict the same wound. I think a man armed with a carbine, especially in enclosed countries, is not at a disadvantage with one armed with the longer rifle, especially in a country like England, where the long range of the rifle would not always be available, as one

would be so much under cover, and there would be the enclosed roads and valleys where we should to some extent be hidden from view. It is a most interesting lecture, and from the Volunteer point of view I feel very thankful for it, and I personally have to thank the lecturer.

The CHAIRMAN (Colonel Lonsdale Hale):—I should like to offer with regard to the lecture a few remarks from the tactical point of view. I doubt the wisdom of dividing the protecting troops into two bodies—the escort and the guard—and also of placing the command of the protecting troops in the hands of two officers, instead of in the hands of one officer. Then Captain Terry would provide for his guard by giving so many men per company. Thus the guard depends on the number of companies required for the technical working of the convoy, and although the commander may foresee that, owing to the difficulties of the road, the convoy during the march will inevitably cover two or three times the length of road it covered at starting, the escort for this extra length cannot be provided for beforehand, because it depends solely on the number of companies with the convoy. I have every sympathy with Captain Terry in his effort to secure some portion of the combatant command to the A.S. Corps, because if his Corps may be denominated the fifth arm, we—the Engineers—are supposed to be the fourth arm, and we used to be terribly sore in the old days, when we were not allowed to be regarded as a combatant arm in any way. In the field the Royal Engineers and Army Service Corps stand with regard to many of their special duties precisely on the same footing. Let me suppose that Captain Terry is in charge of a convoy, and I am in charge of a pontoon train. Our position is exactly the same. He is told to take the convoy; I am told to make the bridge over which it has to go. He and I have both passed the examination in tactics, and why should not we do the fighting work? But my special duty is to make the bridge, and I cannot be in two places at once, and do two things at once. In the same way with the Army Service Corps. Captain Terry is in charge of the convoy, and must be with the convoy, and not away from the convoy. I always told my brother officers when I was teaching them tactics, that they should understand tactics sufficiently so that when executing their technical duties they should carry them out as far as possible in accordance with tactical requirements. If I am sent with a pontoon train to make a bridge across a river, and if I know nothing of tactics I look at making the bridge only from a technical point of view and say, "I will make the bridge at that point." The officer in command comes and says, "If you make the bridge at that point I cannot protect you; you make it half-a-mile farther off and I can protect you." If I know nothing about tactics I may quarrel with him; but my knowledge of tactics enables me to judge his views, and we co-operate together. We sappers have been taught tactics in order that we may put our fortifications and such-like in conformity with the requirements of tactics. In the same way the Army Service Corps officer may elect to park or to march by a particular road. The officer commanding the escort comes up and says:—"I cannot protect or defend you if you go by that road, or if you park on that spot." If the Army Service Corps officer understands tactics, there will be co-operation and agreement, and that is the value of the Army Service Corps learning tactics. I am afraid, Captain Terry, I must differ from you, although I sympathise with you very much. When I was your age I kicked terribly against being, as a sapper, regarded as a non-combatant officer. But no doubt there is contentment to be got from the history of the past; and although I daresay I should like our sappers to have been at the Atbara in the fighting line, yet I am content to think that there would have been no Atbara at all if the sappers had not made the railway. It is just in the same way with the Army Service Corps; if they have not the glory of fighting they carry out their work of supplying the fighters, and without their invaluable aid there could be no fighting at all.

Captain TERRY, in reply, said:—I am going very briefly indeed to reply to the remarks which have been made, because I am in a somewhat difficult position.

The officers, with one exception, who have been kind enough to criticise my paper, are so immensely my seniors, that I really cannot get up and say that I do not agree with them. It would only make me, perhaps, ridiculous. However, I should like, in reply to Colonel Reeves, to say that as far as I can understand, he starts very much with the same hypothesis as I did, only he came to the conclusion that by the Corps being self-defensive it would hamper the general in command. I am very sorry, but I must stick to my opinion that it would help him. I think the more independent his different arms may be in themselves, the less he will have to bother about what after all are really details. Then Colonel Reeves spoke about the work of the train abroad being, generally speaking, different to what it is at home—which no doubt is absolutely correct. But I specially limited my remarks to the case of a big European war abroad in which, I think, the work will be very much the same as it is at home, because you will have the same kind of country to manoeuvre over and very much the same kind of work to do as we have in the big manoeuvres here; if not, then the big manoeuvres are no use. Colonel Reeves asked what would you do with this number of men, supposing the companies were increased in proportion of two men to a horse. Well, my answer to that question is, that it is only by increasing the companies to such strength as I suggested that we shall be able to practise what I would like to see the companies do in war. If you do not increase the men you cannot do it. We have not enough spare men, and you cannot tell the few we have to fight. They are all driving. You want the additional spare men to give them a smattering of the training I hold to be necessary. I think Colonel Reeves made a mistake—I say it with all respect—but I understood him to say that we should have many more spare men in war, but that is not the case. The proportion is less—only one in six on a war footing; whereas in peace, even with our present establishment, it is two in three; so that as we go on increasing our men we do not increase the relative number of spare men, but we get fewer spare men although the total is bigger. I say we want more spare men, not less. As regards the reservists, both Colonel Reeves and Lord Methuen spoke up for them. I wish it to be understood that I don't say anything against the reservists as men or soldiers. What I did say was, that when you take the field in a transport company (which has to be split up more or less), you want a company that has been thoroughly welded together. I quite admit that at the end of a campaign reservists are as good soldiers as anybody, probably better, because they have been soldiers longer; but when you have a company of only 50 men of all ranks and you increase it to 250 or 300 with reservists, I say it will be a difficult thing to start that company fair and square. You have men who do not know each other, and who do not know you, and may not trust you; or you may not trust them; and until you get to know one another you will find it somewhat difficult to carry on the work. In reply to General Lord Methuen: he instanced India; but as the Army Service Corps does not go there I did not take that country into consideration at all. Of course, I know if we had to repel, say, a Russian invasion, it might be possible that the Army Service Corps companies would be sent out to help the Indian transport; but I confess that is rather a remote contingency, and I have not from that point of view considered the subject at all. As regards the carbine, with great respect, I cannot agree that it is a better weapon, and I cannot agree with Captain Heath, because it seems to me that an enemy armed with a long-range rifle might pick off your men and horses, and if your escort has nothing but a carbine to fire back with it might not reach the enemy at all. You must have a weapon that will be able to reach the enemy; it does not matter how straight it will shoot up to 600 or 800 yards if the enemy can shoot straight up to 1,200. As regards the weight, the 2 lbs. difference would not matter in the least if the rifles were carried as I suggested they should be, on the wagons. If you have it on the horse's back the weight does matter, but if you put it on the wagons and let the animal draw it, it is practically immaterial. In answer to Captain Heath, I have only to say that I

have not considered the conditions of defending England, because I am one of those who hold that as long as we have command of the sea invasion is impossible. With regard to your remarks, Sir, our little battle has been fought out already on paper, more or less, and, with great respect, I think we have left off agreeing somewhat to differ. There is one thing, however, I should like to say. You talk of a convoy trailing out, which no doubt it does; but I do not think, under ordinary conditions, that individual companies ought to trail out. The company ought to be able to keep together fairly, and therefore I have taken the company as a unit, and the escort of the company as a unit; and so you will always have your 100 or 70 men to defend your company. If it trails out, you must split up your escort. I have only argued from the supposition that any enemy that may attack you will consist only of small bodies, who may have either got round or otherwise eluded your covering screen, which I still maintain will be necessary to act at long distances from the convoy. I do not look forward to the time when the convoy will have to repel a general attack, because that will be done by the convoy guard falling back on the convoy, and doing the fighting; but I do think it is possible that a small body of the enemy may elude that screen, and give you a certain amount of desultory fighting. It is for this purpose that I think the spare men of the Army Service Corps should be trained to take their place in battle more than they are at present. I have to thank you, Sir, very much for the honour you have done me in taking the Chair this afternoon, and I have to thank the distinguished officers who have so kindly spoken, and also all those who have listened to my remarks.

PRESTON.

*Translated from Hoenig's "Oliver Cromwell" by Major J. M. GAWNE,
The King's Own (Royal Lancaster Regiment).*

THROUGH his "Two Brigades," "Tactics of the Future," "Campaign on the Loire," etc., Captain Hoenig is familiar to many readers of this JOURNAL. His earlier production, "Oliver Cromwell," has, however, missed general notice in England, possibly from its title, possibly that although known to be a military work, it did not refer to the 1870 campaign. The unorthodox opinion is, however, widening, that the Alpha and Omega of strategy and tactics is not contained in the Franco-German War. To such English heretics a study of Hoenig's "Cromwell" is strongly recommended. The campaigns are very genially treated, and Captain Hoenig draws attention to many points of Cromwell's military genius, which escape notice in other works. He is certainly very successful in demonstrating that the great Englishman anticipated, in his use of cavalry, Napoleon and Blücher in the pursuit, Moltke in the cavalry veil. Even at this distance of time many of the battle-fields are comparatively untouched.

The following extract has been translated, with the hope that it will lead to a study of the original and of Cromwell.

BATTLE OF PRESTON, 17TH AUGUST, 1648.

POSITION OF AFFAIRS AT COMMENCEMENT OF JULY, 1648.

North.—The Scotch, invading England, have reached Annan, on the border, on the 8th July, with an army of 25,000, commanded by the Duke of Hamilton. They are observed by cavalry under General Lambert. An encounter has taken place between the cavalry of either side, in which the Scotch were roughly handled. Lambert is supported in York by Militia.

Wales.—Cromwell is besieging Pembroke, the capture of which, on the 11th July, frees him to join Lambert.

South of London.—Fairfax is crushing isolated bodies of the Royalists.

The Scotch had now two alternatives before them: first, to push on quickly between Cromwell and Fairfax, tackle each in detail, and then march on London; or, secondly, advance straight on London through Yorkshire, which was wavering in its choice.

Hamilton selected the first, but his march was of a very desultory, undecided character, since he only reached Preston on the 15th August, *i.e.*, ninety-four miles in thirty-nine days. Meanwhile he had absolutely no information regarding Cromwell, whom he believed on the 16th August to be still in Wales.

Hamilton's selection of routes did not by any means meet with unanimous approval from his subordinates. Several of these urged that their Scotch infantry tactics and superiority in cavalry would find a more fitting field in the open wolds of Yorkshire than the intricate country of Lancashire; Hamilton, however, held to his resolution, hoping that reinforcements would join him on this line of march. His long drawn-out column of march shows how little he recked of any sudden attack. From Langdale with the advanced guard to Monro's Irish rear guard, 20 to 30 miles, was no uncommon distance.

Cromwell's first step on hearing of the Scotch advance was to reinforce Lambert with six squadrons. Lambert, whose force was now that of a modern cavalry division, was instructed to hang closely on the Scotch advance, but to risk no serious engagement; finally, but not least, he was to continuously supply information to Cromwell.

On the fall of Pembroke, Cromwell, in determining on the line of march of his main body, took the following into consideration:—A direct march through Wales on Carlisle or Kendal would lie through a very mountainous country, and would entail many privations on his exhausted and now ill-booted troops. On the other hand, abundant supplies of food and boots would be found on the route leading through Brecknock, Gloucester, Warwick, Leicester, Nottingham, on Leeds and York. Further, though this march was long and circuitous, an attack on it from the north would always find him between the invaders and London; his cavalry veil also promised him complete concealment from the enemy during the movement.

Marching on the 15th July from Pembroke, Cromwell's cavalry joined hands with that of Lambert near Barnard Castle on the 27th July, Cromwell himself with the infantry reaching Wetherby the following day, the 287 miles having been covered in thirteen days, *i.e.*, at a rate of some twenty-two miles a day—a magnificent performance even on modern roads, but marvellous on the cart tracks of the seventeenth century.

As much of the success which followed was a consequence of the swiftness of this move, and since also one of Cromwell's axioms was that superiority in strategy depended on superior marching powers, it is well to examine his march discipline.

When far from the enemy Cromwell allowed his troops every practical alleviation of the march, *i.e.*, they might sing as on a peace march. When near the enemy, however, there must be absolute silence. March songs were not to be thought of. The entire army marched silently along in

the greatest regularity, "moving like one man," write contemporaries. Even the horses of the cavalry appeared to respect their general's will, for, like the infantry, the cavalry marched noiselessly. When the army moved in such fashion the inhabitants fled to their houses; all knew that the march boded some uncanny deed. Very strict discipline was maintained in the column of route. Intervals were not allowed to be lost, nor might men leave the ranks during temporary halts.

By day the cavalry moved some 18 to 25 miles in front of the infantry, but at night followed in close order some 600 paces in rear of the same. In difficult situations only half the cavalry might unsaddle, the other half must be always ready to mount. Cavalry in touch with the enemy, *e.g.*, outposts, must be always saddled. The order of marching was as follows:—In front, by day, six picked horsemen under an officer; by night, the horsemen were replaced by infantry. Following this point came, by day, one to two squadrons—dragoons for choice; by night, one to two companies. In rear of these marched at 1,500 paces interval the main body. Infantry and cavalry marched in threes. In an advance the rear guard was similarly formed. In a retreat the rear guard was proportionately very much stronger, a brigade of three to four cavalry and infantry regiments under a general or commissary-general. However, there was only one retreat made, that after Dunbar. The flanks were always guarded by day by the cavalry. When in the proximity of the enemy Cromwell never undertook a night march, save in the greatest urgency, reckoning them otherwise as mistaken.

The nearer he approached the enemy the further forward betook himself Cromwell with his staff—in difficult positions, even going to the front. This he did to see everything himself and to make his arrangements from here, as an example will show later. The concentration of the mass arose from Cromwell's belief that no misfortune could befall an army marching under his eye.

During a march in the neighbourhood of the enemy, Cromwell rode along brooding and silent, always occupied with the adversary. As soon, however, as he had solved the situation, the gloomy, brooding, and silent man gave way to one full of life and action, fairly sparkling with pithy and humorous epigrams.

At night, orders were only to be passed in a whisper. The intention of the march was imparted to no one but the leader of the advanced guard, and then by Cromwell personally, who otherwise invariably observed absolute secrecy regarding his movements. This was how he was able to again and again steal with his troops like a cat on his enemy, and when quite close to him with his concentrated strength, overwhelm him by a crushing spring—a feat in which Cromwell was unrivalled.

Having united his troops with those of Lambert between Leeds and York, Cromwell next proceeded to inform himself by means of scouts and spies as to the Scotch operations. With this intention, Lambert was directed to push forward his horse towards Appleby and Kendal. On the 19th July, Appleby was reported to be occupied by the enemy's cavalry. At first thrust forward, some seventy miles in front of the army, Lambert's

instructions were to show only single horsemen, generally to fall back, observing the Scots, and to provide Cromwell with constant information. Lambert had at his disposal six cavalry regiments and six squadrons—therefore more than a modern cavalry division. The reports from these troops were all agreed as to the Scotch march through Westmoreland, a country unfavourable to either rapid or great successes, owing to its mountainous character. Cromwell consequently elected to remain for the time between Leeds and York, leaving Lambert with his cavalry in the Pennine Hills.

This range runs in a fairly straight direction from north to south, from Carlisle to the north of Nottingham, and to a certain degree separates northern England into eastern and western divisions. The rivers rising in this range cut it without exception into eastern and western valleys in their course to the sea, and along these valleys run, to the present day, the main roads. The road which concerned Cromwell most, after the Scotch had entered Westmoreland, was that following generally the course of the Ribble, flowing from east to west, and meeting the sea west of Preston. *To keep this road open was the main duty of his cavalry.* While east of the Pennines the country is mostly open, hilly, arable land; westwards, on the contrary, Lancashire is formed of coastland—low-lying, flat, and intersected by numerous rivers, streams, and hedges. The roads sometimes partake of the nature of causeways, as they are higher than the adjacent country, which, during the wet seasons and when much rain falls in summer, is only traversable by single horsemen. This description is peculiarly applicable to the Preston-Wigan-Warrington high road. Since, during the operations we are now relating, the rain was never-ceasing, Cromwell, in a battle, was deprived of his main arm, the cavalry; a disadvantage of considerable weight for Cromwell, the cavalry general; but which could not induce Cromwell, the strategist, to depart from his design of falling on the Scottish column of march, with his entire force from the east, as soon as the enemy should reach the coastland just described. While Lambert with his cavalry kept a constant watch on the adversary, changing front from north-west to west as the Scotch advanced further south, the "Fox" himself, with the mass of the army, remained quietly hidden in his lair between Wetherby and Knaresborough, alert and ready, waiting for the favourable moment to hurl himself from east to west through the door of the Ribble on the Scots. Even though the long Pennine Ridge materially favoured Cromwell's hiding-place on its east, still, nevertheless, the strategic use of his cavalry at this critical period is exemplary. Whilst, for instance, the Scotch marched further south, orders were reiterated to the cavalry only to show single horsemen, keeping larger bodies back, and so to yield to the enemy's horse as to lead the adversary to believe he was only watched by a weak force. So absolutely successful was the employment of the cavalry that the battle of Preston was the first information received by Hamilton of Cromwell's presence. Up to then the Scots had only surmised a detachment of some 3,000 of the enemy's horse

under Colonel Ashton on their flank, to tackle which Ashton was sufficiently strong.

As the enemy's main body neared the Ribble, Cromwell, on the 13th August, marched from Wetherby to Ottley (16 miles), casting off from him at Knaresborough all his trains, as too great a hindrance on mountain roads. On the 14th he advanced to Skipton (19 miles), on the 15th to Gisburne (15 miles), and on the 18th to Hodder Bridge (11½ miles). Here, after receiving his reports, Cromwell debated whether to strike the enemy's flank south of the Ribble, by a march through Whalley, or to accomplish this north of the Ribble, moving over the Hodder Bridge. Since the latest reports (16th) were that the Scotch rear guard was still far behind, and as also Preston lies on the northern bank, and it might be assumed Hamilton would hold the town till Monro's arrival, Cromwell therefore at once—*i.e.*, on the 16th—resolved to cross the Hodder Bridge, and so move by the northern bank, pushing forward early next morning (17th) against Preston, where he considered the enemy must accept battle. Both from a strategic as well as a tactical point of view this resolution must be regarded as masterly; for operating through Whalley on the south bank, a successful stroke left open a possible escape northwards for a large portion of the enemy's army. On the other hand, a success at Preston cut off all retreat for the Scots, and their annihilation¹ might be safely expected. On the night 16th-17th August, Cromwell's army—the cavalry in touch with the enemy—rested at Stonyhurst Hall, nine miles from Preston. The main body of Hamilton's infantry² lay at Preston. His advanced guard or cavalry, under Calendar and Middleton, had reached Wigan the same day, while Munro, with the rear guard, was sixteen miles north of Preston. Langdale, with part of the cavalry, was observing the east at Langridge Chapel, four miles up river, being here but five miles from Cromwell's headquarters without being able to gather any information regarding him.

During the march described above, Cromwell had, on the 13th August, met General Lambert at Ripon, and from that time on remained with this general's advanced guard, himself reconnoitring and verifying facts. The strength of the joint English forces is generally given as 9,000 men. "A fine, smart army fit for action," says Hodgson. On the 13th August Henry Cromwell attacked at Gargrave a foraging party of Langdale's cavalry, capturing it to almost the last man. Since then nothing else of importance had happened.

When early on the morning of the 17th Cromwell appeared at the advanced guard, its cavalry—two squadrons or 200 horse, under Major Smithson—had already driven in Langdale's outposts, both cavalry and infantry, from Langridge Chapel. On information of this arriving, Cromwell ordered the infantry—some 400 men, under Major Pownell and Captain Hodgson—to at once follow up the cavalry. He himself

¹ "Dissipation," to use Cromwell's expression.

² Athwart the Ribble.

was so impatient that he gave the executive command "March," and so commenced the battle of Preston.

Cromwell directed the main body to follow the advanced guard, which, meanwhile, was pushing back the enemy's outposts on Preston, capturing in so doing several prisoners. On the north, General Lambert had to cover the march with the greater part of the cavalry. The important post of Whalley was guarded by some squadrons of dragoons. At the head of the main body were Harrison's and Cromwell's horse regiments, which, at Cromwell's order, attacked along a "very deep and ill lane"—the main approach to Preston—in order to gain room for the troops following them. After clearing the lane in this fashion Cromwell advanced to the attack¹ of Preston, held by two infantry brigades. To the right of the lane were deployed the foot regiments of Reade, Dean, and Pride, the last two later on outflanking the enemy, while Reade's advanced on the centre. Left of the lane were Bright and Fairfax's foot. The reserve was formed by Colonel Ashton and two Lancashire infantry regiments. Of the cavalry, Cromwell drew Twiston's and Thornhaugh's regiments to the right flank, and assigned a third as reserve to the lane; the remaining cavalry—Cromwell's and Ireton's regiments—were, after their successful attack, moved to the extreme left. In such order the line on this side pushed forward, in crescent form, from hedge to hedge against Preston, Cromwell thus delivering his blow directly against the Scottish line of retreat. Whilst the Scotch were making stand north of the main road, the cavalry of the left wing—Cromwell's leading and followed by Ireton's—moving along the Ribble, succeeded in reaching the bridge. Although the Duke of Hamilton personally thrice repulsed this cavalry, the two English regiments remained victors of the field, and Baillie's two brigades were thus severed from the bridge and captured.

Cromwell's words describing the fight before the town and the entrance into the same illustrate it so realistically, and are tactically so valuable for the student of the history of war in forming his opinion of the style of the fight, particularly as regards the infantry, that they are given here in the original:—"So that, at last, we came to a Hedge dispute; the greatest of the impression of the Enemy being on our left wing; and upon the 'Main' battle on both sides of the Lane, and upon our Horse in the Lane; in all which places the Enemy were forced from their ground, after four hours' dispute; until we came to the Town; into which four troops of my own regiment first entered; and being well seconded by Colonel Harrison's regiment, charged the Enemy in the Town and cleared the streets."

On Hamilton perceiving that the town had been captured he directed Baillie's infantry, which were on the south bank of the Ribble, to attack the bridge in order to recover the town and to let Monro come to him. Meanwhile, however, Cromwell had occupied the northern bank of the

¹ Exactly corresponding to the attack of Napoleon I. at Somo-Sierra, 30th November, 1808.

Ribble with four regiments—three Lancashire and Fairfax's—and these standing “within thick hedges held the bridge under a crescent-shape fire, and thus shattered all the Scotch attacks.” The battle lasted till dark, when only exhaustion on either side put an end to it. Nevertheless, Cromwell, on the same evening, led part of the infantry across the bridge, and established them in several houses on the south bank. He, however, forbade, on account of the darkness, any further advance southwards. Meanwhile, north of the Ribble, the cavalry had scoured the country for ten miles, returning with a booty of 500 horses. On the south, the Whalley detachment remained close at the heels of the enemy. Hamilton's loss was over 1,000 killed and nearly 4,000 prisoners, besides all his trains, including his ammunition. The troops which had fought against Cromwell this day formed the main body of the Scotch army, including Langdale's corps. Munro, with the rear guard, heard, while marching south, of the battle having broken out. Although he was certainly observed by Cromwell's independent cavalry, nevertheless it is curious that, instead of hurrying to the battle-field he drew bridle, paused and then, still on the 17th, commenced his retreat on Scotland. The advanced guard, chiefly cavalry, under Calendar and Middleton, was fourteen miles south of Preston in Wigan, whence they arrived towards evening south of Preston.¹ In Preston the Duke of Hamilton had commanded in person.

South of the lost Ribble Bridge, Hamilton held in the darkness a council of war, and determined, against the arguments of Baillie and James Turner, to fall back on Wigan. The troops were exceedingly wet, weary, and hungry; the ammunition must be abandoned, and Cromwell's horse behind them. What can be but the only end?

Retiring on the evening of the 17th August, the night of the 18th found the army of Preston, but half its former strength, at Wigan Moor, where also Middleton's horse, constantly harassed by Cromwell's cavalry, had joined them. Since the ground did not favour defence, a fresh council of war determined on a further march to Warrington, where, behind the Mersey, it was hoped to find shelter from Cromwell's cavalry. Thereupon the army set itself afresh in motion—in advance Hamilton and Calendar, the rear guard, under General Middleton, consisting of infantry and cavalry, the last being nearest the enemy.

Before, however, the rear-guard infantry brigade had passed through Wigan, single horsemen galloped up to its commander—Turner—with the news:—“Cromwell has dispersed and cut to pieces the rear-guard cavalry; the enemy is in the rear.” Turner endeavoured to defend the market-place, but in vain. He himself was severely wounded by his own people. Infantry and cavalry were crushed up together, shouting and yelling in the moonlight night. Colonel Lockheart was sorely wounded.

¹ “General Middleton missed Hamilton and Baillie here, for he came by another road to Ribble Bridge. Not finding them there he followed their track to Wigan Moor, hotly pursued by Cromwell's Horse.”—Translated from James Turner.

The rear guard, panic-struck and repeatedly alarmed afresh by Cromwell's cavalry, did not survive the morning of the 18th August.

The main body, under Baillie, reached, during the night 18th-19th August, Redbank, two miles north of Warrington. Here it took up a position to receive the rear guard. Instead of this, appeared Colonel Pride's troops. A fresh and sharp fight took place; a new retreat followed.

At Warrington, Baillie had hoped to find Hamilton and Calendar. Instead of them he received orders to enter into conditions for the surrender of the infantry, whilst Hamilton still hoped to save Calendar's cavalry.

Having followed the Scots so far, we must return to Cromwell at Preston on the evening of the 17th. After he had given orders to the cavalry for a pursuit north and south of the Ribble (which, however, did not succeed in capturing Monro; for, as mentioned before, this general, on hearing of the battle of Preston, had, with very little delay, turned about), Cromwell then wrote the following letter to the "Honourable Committee of Lancashire, sitting at Manchester."

"Preston, 17th August, 1648.

"Gentlemen,—It hath pleased God, this day, to show His great power by making the Army successful against the common enemy.

"We lay last night at Mr. Sherburn's, of Stonyhurst, nine miles from Preston, which was within three miles of the Scots' quarters. We advanced betimes next morning, with a desire to engage the enemy; and by that time our forlorn had engaged the enemy; we were about four miles from Preston, and thereupon we advanced with the whole Army, and the enemy being drawn out on a moor, betwixt us and the town, the Armies on both sides engaged; and, after a very sharp dispute, continuing for three or four hours, it pleased God to enable us to give them a defeat, which I hope we shall improve by God's assistance to their utter ruin; and in this service your countrymen have not the least share.

"We cannot be particular, having not time to take account of the slain and prisoners; but we can assure you we have many prisoners, and many of these of quality; and many slain, and the Army so dissipated, as I say. The principal part thereof, with Duke Hamilton, is on south side Ribble and Darwen Bridge, and we lying with the greatest part of the Army close to them, nothing hindering the ruin of that part of the enemy's Army but the night. It shall be our care that they pass not over any ford beneath the bridge to go northward, or to come between us and Whalley.

"We understand Colonel General Ashton's are at Whalley; we have seven troops of horse or dragoons that we believe lie at Clitheroe. This night I have sent order to them expressly to march to Whalley to join to these companies; so that we may endeavour the ruin of this enemy. You perceive by this letter how things stand. By this means the enemy is broken, and most of their horse having gone northwards,¹ and we having

¹ Cromwell was mistaken here.

sent a considerable party at the very heel of them, and the enemy having lost almost all his ammunition and near 4,000 arms, so that the greatest part of foot are naked ; therefore in order to perfecting this work, we desire you to raise your county and to improve your forces, to the total ruin of that enemy, which way soever they go ; and if you shall accordingly do your part, doubt not of their total ruin.

" We have thought fit to speed this to you ; to the end that you may not be troubled if they shall march towards you, but improve your interest as aforesaid, that you may give glory to God for this unspeakable mercy. This is all at present from

" Your very humble servant,
" OLIVER CROMWELL."

The thoughts expressed here are those of an arch-general, who, even under the terrific excitement of the battle, quietly considers what means will leave the antagonist nothing open but unconditional surrender. Whether the Scots laid down their arms a day sooner or later mattered little ; that such must be the end was assured.

Whilst making these arrangements for the pursuit, Cromwell had granted his troops a brief rest ; and thus Hamilton, with 8,000 infantry and about 4,000 horse, was enabled to gain a start of about eight miles during the night of the 17th-18th August. Colonel Thornhaugh, with three horse regiments, was entrusted with his immediate pursuit, Thornhaugh's orders being to bring the fugitives to a stand. He overtook the enemy's rear guard north of Wigan on the night of the 17th-18th, dispersed it, but was himself killed by several lance-thrusts. Early on the morning of the 18th his cavalry resumed the pursuit of the remainder of the Scottish main body, now some 3,000 infantry and 2,500 horse. The enemy appeared to have a desire to fight, but on Cromwell preparing to attack anew drew off to Wigan, whence he was again scared. Cromwell halted here for the first time, having marched in streaming rain some twelve miles from the battle-field of Preston. The troops lay in mud and rain in the open field. Cromwell says he had never ridden such ground " in his life, the day being very wet." The discouragement of the enemy was so great, that on the 18th the result of quite a small skirmish was the capture by Cromwell of quite a number of officers of high rank, among them being General von Druske, Colonel Harry, Lieut.-Colonel Innes, and 100 men. Before leaving Wigan, Hamilton despatched a letter to Cromwell, in which he begged for favourable treatment of his wounded relative, Colonel Hamilton, whom he had left behind. On occupying Wigan, the town presented a lamentable appearance ; the houses were broken into, the inhabitants had fled ; house and byre were plundered.

Cromwell stayed the night in Wigan, and on the morning of the 19th, following up the pursuit, found that the enemy had taken up a very favourable position within three miles of the north of Warrington. Here the Wigan-Warrington main road leads through a very strong position, called the Winwick Pass. The Scotch had occupied the ground in such fashion as to enfilade the main road, and as the ground on either side of

the road was so soft as to preclude its use, Cromwell had no alternative but to storm the front of the pass. As soon, therefore, as his main body came up he gave the order to attack. A very bitter sword conflict ensued, but, nevertheless, the gallant stormers had to fall back. Cromwell re-ordered them, put himself at the head of the storming column, and, after another bloody hand-to-hand struggle, the pass was then at last carried. The fight had lasted several hours. The enemy left 1,000 dead on the ground and 2,000 prisoners.¹ Without losing a minute Cromwell's cavalry rode through the pass, driving the enemy before them as far as Warrington.

Warrington lay on the southern bank of the Mersey, and the bridge giving access to it was protected by a bridge-head.² Thus to follow up the pursuit into the town itself was out of the question.

Whilst reconnoitring the works Cromwell received a messenger from General Baillie, the Scottish commander here, who desired to capitulate. So shaken were the Scots that they did not even think of resistance behind this fortified position. As Cromwell had convinced himself that an attack on the bridge-head was impracticable, and that to turn the position by crossing the Mersey would necessitate a march of ten miles to the flank, he determined to grant the enemy favourable terms. Baillie had to surrender himself and all his officers and soldiers as prisoners of war, with his arms, ammunition, and horses, to Cromwell, who, however, promised Baillie "quarter for life" and "civil" usage to the prisoners. The treaty was thereon made, and consequently 4,000 men laid down their arms: this was the remainder of the infantry.

Hamilton had in the meantime fled with about 3,000 horse in the direction of Nantwich. "If I had," writes Cromwell to Lenthall this 20th August, "but a thousand horse that could but trot thirty miles I should not doubt but to give a very good account of him."

During the pursuit Cromwell had kept back in Preston Colonel Ashton with three foot regiments and seven troops of horse (six of Lancashire, one of Cumberland). As soon as the last of the Scottish infantry had laid down their arms, Cromwell commanded Colonel Scoop with five troops of horse and two troops of dragoons, and also two regiments of foot (Colonel Lascelles's and Colonel Wastell's), to move there too. These troops had to guard the 10,000 prisoners. If the Scots should attempt to free these the commanders were "ordered to put their prisoners to the sword." Moreover, "ten men will keep a thousand from running away."

* * * * *

On the same 20th August, the Committee at York was sent a demand to take part in the pursuit of the Scots still in the field. Cromwell had now, as regards himself, halted in Warrington, and handed over the

¹ Cromwell's Report to Lenthall, 20th August, 1648.

² Where they possessed the bridge, which had a very strong barricade and a work on it, formerly made very defensive. Cromwell's Report to Lenthall, 20th August, 1648.

pursuit to Lambert, who was hard after Hamilton with four regiments and some dragoon squadrons in the direction of Nantwich. As Hamilton turned from here in a south-east direction, Cromwell had fears that by taking a circuit through Yorkshire he might regain Scotland. To prevent this, Cromwell requisitions the York Committee to let the Yorkshire Militia join Lambert without delay in the pursuit in order that the last Scot might be swept into the net. From this letter of Cromwell's one learns what the condition of the cavalry on either side had arrived at in these last few days. "They," the Scots, "are so tired and in such confusion that if my horse could but trot after them, I could take them all." Farther on, "For they are the miserablest party that ever was: I durst engage myself with Five-hundred fresh Horse and Five-hundred nimble Foot to destroy them all. My Horse are miserable beaten out; and I have Ten-thousand of them prisoners. The greatest part, by far, of the Nobility of Scotland are with Duke Hamilton."

After thus directing the pursuit to the uttermost, Cromwell betook himself to Wigan again, whence the York Committee received a fresh incitement dated the 23rd August:—"I have intelligence," says Cromwell, "even now come to my hands that Duke Hamilton with a wearied Body of Horse is drawing towards Pontefract; where probably he may lodge himself and rest his Horse;—as not daring to remain in those Countries whence we have driven him; the Country-people rising and stopping his passage at every bridge.

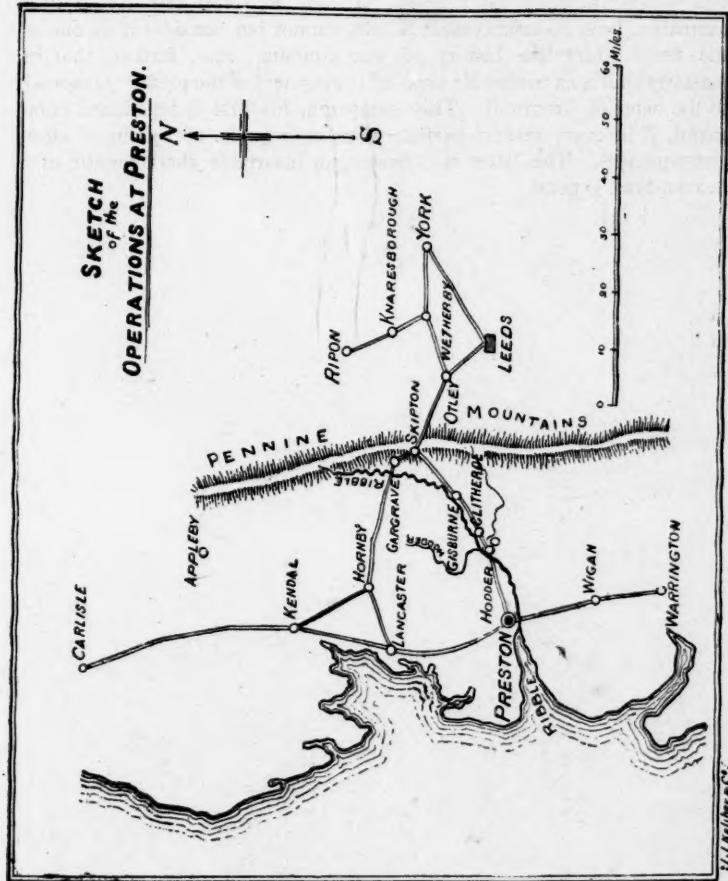
"Major-General Lambert, with a very considerable force, pursues him at the heels. I desire that you would get together what force you can, to put a stop to any further designs they may have, and so be ready to join with Major-General Lambert if there shall be need. I march northward with the greatest part of the Army."

Now, Hamilton had certainly taken a south-eastern direction. Nevertheless, he did not reach Pontefract, but by the 25th August he, his staff, and all his cavalry, had already laid down their arms to Colonel Waite at Uttoxeter, fifty-six miles south-east of Warrington. Hamilton was very ill and unable to continue the march. Before this also it had come to mutinies amongst his soldiers and bitter quarrels between the seniors on his staff. No one would be responsible for the great misfortune. The commanders blamed each other for incapacity, etc. In a word, on the 25th August the famous Scotch army ceased to exist. Being, as Earl of Cambridge, an English peer, Hamilton was attainted of high treason and perished on the scaffold.

It is fitting now to analyse Cromwell's strategy as displayed in this campaign. The first point to be noted is, his concentration in the country between Leeds and York, in order to select from here that line of operations promising the greatest success, always an object of Cromwell. 2. The despatch of more than a cavalry division under Lambert over sixty miles from York towards the Scotch border with orders that they should as quickly as possible establish the enemy's line of operations, continuously observe his columns of march, keep falling back before these and provide Cromwell with constant information. 3. On

learning with certainty the Scotch line of march from the reports of Lambert's horsemen, Cromwell resolved to move along the Ribble and to strike the enemy on the flank at about a right angle, although he knew the Scotch to be twice his strength. 4. Should the flank stroke fail, the natural line of retreat by which Cromwell had advanced remained to him always and was not open to any danger—strategic or tactical. Under any circumstances he could hold the Ribble Pass. Even were this not practicable, he had still to retreat on York or still further south-east. As Lambert's cavalry executed their strategic task with astounding skill, Cromwell not only recognised the operation line of the Scots so early as to be able to arrange with certainty his flank march, but also learnt from the same reports the grouping of the enemy's columns of march. It was now Cromwell's object to march in such a manner as to remain concealed as long as possible. Lambert's cavalry was, therefore, to constantly give way, and thus mislead the enemy that he had only a weak force on his flank. Meanwhile, by this skilful manœuvre, Cromwell brought his entire force within the immediate, in a strategic sense, neighbourhood of the enemy. He was also concentrated as he himself was moving towards his cavalry which was falling back on him. 5. The flank stroke, which Cromwell designed against the Scotch line of operations, could succeed from two directions, but which of the two promised the greater degree could not be discerned off hand, but must be decided by the general from his own personal observations during the final stage of the march, *i.e.*, at the moment where strategy and tactics commence to comingle. On his arrival at Hodder Bridge, Cromwell formed a most exact appreciation of the enemy's position. If he (Cromwell) remained on the southern bank of the Ribble, he might certainly achieve a tactical success against the adversary's long stretched outline of march, but the success would be no decisive victory, since the enemy would retain an open line of retreat to the north for some two-thirds of his force. His weakness in numbers forbade an attack along both banks of the Ribble. Whether he decided to deliver his thrust north or south of the Ribble, it was equally essential he should keep his entire force united. This was the main condition of success in any direction. 6. In crossing with his entire fighting force the Hodder Bridge to the northern bank, Cromwell, from a strategic point of view, selected the bolder course, and also that promising the most success, while at the same time the Ribble covered his left flank. The important point Whalley remained garrisoned by several squadrons. 7. Throughout the battle itself Cromwell sought to cut off the entire force of the enemy in and about Preston from Scotland. 8. During the battle he threw in every man, every horse, every gun against Preston, with the two exceptions of the Whalley detachment and Lambert's cavalry—half a division. This last covered his right flank from the north, observing the Scottish rear guard under Monro, which it was to either attack or pursue, according to the fate of the battle at Preston. 9. On the tactical defeat of the Scots Cromwell makes himself assured of the Ribble Bridge; crosses to the southern bank again; and, 10, now hunts the enemy to death. It would be

wrong to imagine that Cromwell from the first had forecast these various points of strategy and tactics as he carried them out, and as they developed. Such things do not happen in war. Far rather Cromwell had only the *will* to deal the enemy a mortal blow; but what successive steps his project of a flank attack would require to reach the goal could only be recognised by Cromwell during the progress of operations; and this is what actually did happen. Anyone who seriously studies this campaign, from commencement to end, cannot but consider it as one of the finest which the history of war contains; and, further, that its masterly skill is an irrefutable proof of the justness of the prefix "General" to the name of Cromwell. This campaign, his first independent command, is in every respect perfect—even as regards the political after-consequences. The latter is, however, an invariable characteristic of a heaven-born general.



NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Captains—W. B. Graham to "Diadem"; L. E. Wintz to "Furious"; E. P. Jones to "Barfleur." Commander—H. W. Savory to "Cruiser."

The "Illustrious" left for the Mediterranean on the 25th ult.; before leaving she had a very successful commissioning full-speed trial under natural draught, the results being as follows:—Draught of water, forward 27 feet 6 inches, aft 28 feet 6 inches; speed of ship, 15·9 knots; steam pressure in boilers, 149 lbs. per square inch; vacuum in uptakes, 2·1 inches; vacuum in condensers, 26·0 starboard, 25·4 port; revolutions per minute, 95·3 starboard, 95·1 port; mean I.H.P., 5,088 starboard, 4,928 port—total, 10,016; the speed maintained being practically identical with that made when on her measured mile trials. The first-class cruiser "Blenheim" paid off at Chatham on the 14th ult., and was commissioned next day to convey a new crew to the "Barfleur" in China, which will re-commission at Hong-Kong. The first-class cruiser "Edgar" arrived at Plymouth on the 7th ult. from Hong-Kong, bringing the relieved crews of the "Archer," "Linnet," and "Peacock"; she paid off at Devonport on the 25th ult., her machinery requiring some important repairs. The third-class cruiser "Marathon" commissioned at Portsmouth on the 2nd ult., and left on the 21st ult. for the East Indies, where she relieves the third-class cruiser "Cossack." The first-class cruiser "Crescent" was commissioned at Portsmouth on the 8th ult. by H.R.H. the Duke of York for special service. The second-class cruiser "Rainbow" arrived from China at Plymouth on the 22nd ult. and is to be paid off at Devonport. The second-class cruiser "Sirius," which has been employed on relief service, was paid off at Devonport on the 10th ult. The second-class cruiser "Charybdis" was paid off at Devonport on the 30th ult., her place in the Channel Squadron being taken by the "Furious." The repairs to the "Collingwood" having been completed, her crew turned over to her again from the "Devastation," and that ship was paid off at Devonport on the 30th ult.

There is to be no partial mobilisation this year, and the customary annual manoeuvres will not be held; but the Channel and Reserve Squadrons will cruise for tactical exercises, and will proceed later on to Copenhagen, to be present at the festivities to be held there.

The new first-class cruiser "Europa," built and engined by the Clydebank Engineering and Shipbuilding Company, has concluded her trials successfully. On her first trial the ship had to steam at 12,500-H.P. for 30 hours, and when she completed the run the best consecutive 24 hours showed the following results:—Draught of water forward 24 feet 6 inches, and 26 feet 6 inches aft. She had 265 lbs. of steam to the square inch in the boilers, and the vacuum was 24·8 inches starboard and 25·5-inches port, and with 103·8 revolutions the engines developed 12,379-I.H.P., with a coal consumption of 1·94 lbs. per unit of power per hour. During the trial she made four runs over the deep-sea course between Rame Head and Dodman Point, when, with 103·6 revolutions and 12,441-I.H.P., she realised a speed of 19·331 knots. The "Diadem," the pioneer ship of the class, built and engined by the Fairfield Company at Glasgow, at her corresponding trial averaged 19·79 knots over the deep-sea course, with a coal consumption of 1·59 lbs. per unit of power per hour, and 12,776-I.H.P. After coaling at Plymouth

the "Europa" left again for an 8 hours' full-power trial, in which she made two runs over the deep-sea course. She had 279 lbs. of steam in her boilers, and with 113 revolutions and 17,137-I.H.P. she achieved a speed of 20·4 knots, but the mean of the 8 hours gave a collective I.H.P. of 17,010. The "Diadem" at the corresponding trial, with 17,188-I.H.P., gave a speed of 20·6 knots on the deep-sea course. The "Europa" was next required to steam for 4 hours with 24 boilers, or 80 per cent. of her total boiler power, with the object of ascertaining the capacity of the reduced number of boilers to maintain a higher power for a short period than was demanded by the specification. At the 30 hours' trial with the same boilers she developed 12,662-I.H.P., but the mean of the 4 hours' run was 16,298, though the "Diadem," the pioneer ship of the class, did not, under the same conditions, reach 16,000-I.H.P. The "Europa" had 280 lbs. of steam in the boilers, and the revolutions were 110·3 per minute, the vacuum being 25 $\frac{1}{2}$ inches. The speed was taken over a 24-knot course, the distance having been measured by bearings, and two runs over the course gave a mean of 20·9 knots, though at the corresponding trial near Plymouth, with 30 boilers in use, the speed was 20·4 knots. The coal consumption worked out at 1·91 lbs. per unit of power per hour, against 1·95 lbs. in the "Diadem," the mean air pressure in the "Europa" being 45 inch. Throughout the trial the engines and boilers worked satisfactorily, and steam was easily maintained.

The new first-class cruiser "Niobe" has also satisfactorily concluded her trials. At her 30 hours' coal-consumption trial, at one-fifth of her full power (3,300-I.H.P.), the following were the mean results:—Steam in boilers, 290 lbs.; steam at engines, 147 lbs.; vacuum, 28·1 inches starboard, 28·1 inches port; revolutions, 70·2 starboard, 70 port; mean pressure in cylinders, high, 30·8 starboard, 37·8 port; intermediate, 14·6 starboard, 12·8 port; low, forward, 5·4 starboard, 5·5 port; low, aft, 5·1 starboard, 5·0 port. The I.H.P. was:—High, 477 starboard, 583 port; intermediate, 603 starboard, 525 port; low, forward, 299 starboard, 299 port; low, aft, 280 starboard, 275 port; totals, 1,659 starboard, 1,682 port; gross total, 3,341. The coal consumption per I.H.P. per hour was 1·77 lbs., and the vessel maintained a mean speed of 12 knots per hour. The draught of water was 24 feet 3 inches forward, and 26 feet 3 inches aft. The result was in all respects satisfactory. At the 8 hours' full-power trial, which was also very satisfactory, the total I.H.P. was 16,834 (being 334 in excess of the contract), coal consumption 1·66 lbs. per I.H.P. per hour, and speed 20·5 knots.

The "Highflyer," a protected steel cruiser of the second class, was launched on the 4th ult. from the yard of the Fairfield Shipbuilding and Engineering Company, Limited, Govan. The vessel is the sister-ship to the "Hermes," launched by the same builders on April 7th. The two cruisers represent an improvement on the "Juno" class, of which the Fairfield Company built two—the "Venus" and the "Diana." The dimensions of the "Highflyer" are:—Length between perpendiculars, 350 feet; beam, extreme, 54 feet; displacement, 5,600 tons. The hull is of Siemens-Martin steel throughout, to Admiralty requirements on the usual principle adopted in war-ship construction. The vessel, being intended for foreign service and long cruises at sea, in which the maintenance of a uniform speed is essential, has been covered to above the load water-line with teak of a minimum thickness of 3 $\frac{1}{2}$ inches and coppered. The coal capacity is normally 550 tons, but provision has been made for carrying a greater quantity if necessary. The propelling machinery will consist of two sets of triple-expansion engines, fitted in separate engine-rooms, each set having four inverted cylinders and four cranks. Belleville boilers will be fitted by the builders, and it is expected that the vessel will attain a speed of 20 knots. Mrs. Elgar, wife of Dr. Elgar, one of the directors of the Fairfield Company, launched and named the vessel. At the luncheon which followed Dr. Elgar presided, and proposed "Success to the 'Highflyer'." He referred to the great advantages that had accrued from the introduction into the Navy of Belleville boilers. The Admiralty deserved great

credit, he said, for this step, and for the way in which they had worked to make the boilers thoroughly efficient. The boilers had been greatly criticised, but it was generally in places where the criticism could not be replied to—in the House of Commons, for instance. In scientific institutions, where Sir John Durston, the scientific head of the Admiralty, was always ready to reply, these criticisms had been conspicuous by their absence. They in Fairfield had been conducting experiments on behalf of the Admiralty, and those experiments had shown that an increase of evaporative efficiency to the extent of $3\frac{1}{2}$ per cent. could, be obtained.

The first-class battle-ship "Albion" was launched on the 21st ult. from the yard of the Thames Iron Works and Shipbuilding Company at Blackwall, the christening ceremony being performed by H.R.H. the Duchess of York. She is one of the "Canopus" class, her length between perpendiculars being 390 feet, with a beam of 74 feet. At a mean draught of 26 feet her displacement will be 13,000 tons, the vessels of this class being somewhat lighter than our biggest battle-ships. The ship has a belt of Harveyized steel armour 6 inches thick and covering 196 feet of her length, the vertical extension being 14 feet, or 9 feet above the normal water-line and 5 feet below. The ends of the port and starboard sides of the belt are transversely connected by armoured bulkheads of Harveyized steel plate, the thicknesses of which are 12 inches, 10 inches, and 8 inches. The armoured deck extends from stem to stern, and starts from the lower edges of the armoured belt, forming, as it were, a floor to the armoured part in place of being what might be described as a roof. Considerable curve is given to this deck, so that at the longitudinal centre it is 2 feet 6 inches above the normal water-plane. This refers to the middle body : at the extreme ends it dips down in the usual way. The principal armament is carried in two barbettes, which form the forward and after ends of the armoured citadel. These barbettes are circular in plan and have 12-inch Harveyized armour on their upper parts, the lower walls, where the side armour supplies protection, having 6-inch armour. The main conning tower forward has 12-inch armour, there being an observation tower aft with 3-inch armour. Between the armoured bulkheads the main and middle decks are protected by $\frac{1}{2}$ -inch and 1-inch steel. The 6-inch gun positions are casemates having 6-inch armour outboard and two thicknesses of 1-inch plates at the back to arrest splinters. It should be noted that the main-deck casemates give an arc of fire which includes right ahead for the forward guns and directly aft for the after guns, the angle of fire in each case being 120° . The ends of the ship are protected by 2-inch nickel plates, which are worked outside the skin plating from the forward bulkhead to the stem and from the after bulkhead to the stern ; this forms what is practically a continuation of the belt of protected area. The main armament consists of four 12-inch 46-ton wire guns. These are mounted within the barbettes on revolving turntables in the usual way. There are 8-inch Harveyized steel shields over these guns. The twelve 6-inch Q.F. guns are mounted in casemates as stated, eight on the main deck and four on the upper deck. There are also ten 12-pounder guns, six 3-pounder guns, three of the latter being in the military tops, two 12-pounder boat and field guns, and eight 45-inch machine guns, and six howitzers for high-angle fire. There are also four submerged torpedo-discharges, the stern discharge which was to have been fitted having been taken out of the design. These will take the 18-inch diameter torpedo, of which 18 will be carried, in addition to which there will be five 14-inch torpedoes for boat's use. The contractors for the machinery are Messrs. Maudslay, Sons, and Field. The main engines are of the now usual inverted triple-expansion type having high, intermediate, and low-pressure cylinders, of 30 inches, 49 inches, and 80 inches in diameter respectively, the stroke being 4 feet 3 inches. The screws are 17 feet in diameter. The boilers are of the now universal Belleville type, there being 20 in all. They will be pressed to 300 lbs. per square inch, the steam

tension being reduced at the engines. The I.H.P. is estimated at 13,500, which is calculated to drive the ship at 18½ knots. The coal capacity is 1,900 tons.

The launch was unfortunately attended by a serious loss of life, a wooden gangway to an adjoining slip, which was crowded with sight-seers, being carried away by the back wash of the large wave thrown up as the huge hull entered the water.

The four first-class armoured cruisers, for which provision was made in the current year's Navy Estimates, have now all been ordered. The "Hogue," as already stated, is to be built by Vickers, Sons, and Maxim, of Barrow-in-Furness, and, when ready to leave the contractors, will be sent to Devonport for completion. The "Cressy" and the "Aboukir" are to be built by the Fairfield Shipbuilding Company, Glasgow, and are to be sent to Portsmouth for completion; while the "Sutlej," which has been ordered from the Clydebank Shipbuilding Company, Glasgow, will be completed for sea at Chatham.

The electrical and torpedo trials of the new torpedo-boat destroyer "Angler" have been successfully carried out. The official record of the recent twelve hours' coal-consumption trials is as follows:—Draught of water forward 6 feet 1 inch, aft 6 feet 7½ inches; speed of ship, 13·145 knots; steam pressure in boilers, 184 lbs. per square inch; revolutions per minute, 159·4 starboard, 160·1 port; mean I.H.P., 221 starboard, 239 port—total, 460; consumption of coal, 1·84 lbs. per unit of power per hour. The total consumption of coal was 10,192 lbs. The "Angler" has now completed the whole of her trials.

At the instance of Lord Charles Beresford there has been presented to Parliament a comparative return showing the total cost of administration in the War Office and Admiralty, giving particulars of the number of military and naval officers employed in the War Office and Admiralty, with their rank, salaries, and allowances; also the total number of civilians employed, showing their rank, salaries, and allowances, together with the total amount estimated by the War Office and Admiralty in the financial year 1898-99, showing the amount expended in salaries, wages, and allowances, and the amount expended on material and works. In the War Office 96 officers, 38 warrant officers, and 108 non-commissioned officers are employed, with salaries and allowances amounting to £102,691; while in the Admiralty there are employed 75 officers, 10 warrant officers, and 4 non-commissioned officers, with salaries and allowances amounting in the aggregate to £57,948. The Parliamentary staff of the War Office consists of three officials, with salaries amounting to £8,750, and that of the Admiralty of three officials receiving salaries amounting to £7,850, the First Lord being also allowed a house. The permanent civil staff of the War Office consists of 521 persons, with salaries of £122,213, and that of the Admiralty of 591 persons, with salaries and allowances aggregating £139,613. The salaries, etc., of the technical staff, with those of the office keepers, messengers, and the like, added to the above sums bring the War Office total up to £159,519 for 776 persons, while with similar inclusions the Admiralty total is £203,665 for 897 persons, the respective estimates for the Army and Navy for 1898-99 being £19,220,500 and £23,778,400. A comparison of details shows that the Field-Marshal the Commander-in-Chief of the Army receives a salary of £4,500, while the Admiral who occupies a similar position as First Sea Lord draws in salary and allowances £2,266, and has, moreover, the use of a house. The salaries of the next immediate officers in rank at the War Office, two generals, two lieutenant-generals, and eight major-generals, aggregate £20,700, while at the Admiralty two vice-admirals and four rear-admirals receive together in salaries and allowances £9,519—an average of £1,725 in the case of each officer at the War Office and £1,586 10s. in that of each officer at the Admiralty. The cost of the officers who administer the War Office amounts to 5·3 per cent. of the total military expenditure; whereas the naval officers who do the same service for the Admiralty draw upon the total naval expenditure to the extent of

2·4 per cent only. With regard, however, to the total administrative expenses, the Services each spend in this way about 8·5 per cent. of their respective estimates, the cost of the Admiralty's technical and constructive staff, dealing with material and works, bringing up the expenses to this percentage.

During the assembly of the Diamond Jubilee fleet at Spithead last summer considerable attention centred on a small torpedo-boat destroyer named the "Turbenio," which, although only 100 feet long and of 9 feet beam, steamed up and down the lines at a speed of 33 knots. She was built on the "turbine" principle, her motive power being supplied by three turbines instead of by the ordinary marine engines. The success of the vessel was so pronounced that the Admiralty have given an order for a torpedo-boat destroyer to be built on the same principle. She is to be called the "Viper," and her construction has been entrusted to Parsons Marine Turbine Company, Newcastle-on-Tyne. She is intended solely as an experimental ship, in order that the Admiralty may be able to test the applicability of the turbine system to torpedo-vessels of exceptionally high speed. The builders are not bound to speed as in the case of ordinary destroyers, but they will aim at the attainment of a speed of 35 knots an hour.

BRAZIL.—On the 18th ult. the new battle-ship "Marechal Deodoro" was launched from the Chantiers de la Seyne, near Toulon, for this Government. The "Deodoro" and her sister-ship, the "Floriano," are small ironclads of only 3,162 tons displacement, but in their way they are formidable little vessels. Their dimensions are as follows:—Length, 267 feet 6 inches; beam, 48 feet; draught, 13 feet 2 inches. The engines are to develop 3,400-I.H.P., giving a speed of 14 knots under natural draught, and 15 knots under modified forced draught; the boilers will be water-tube, on the Lagratal and D'Allest system. Protection is afforded by a complete water-line belt of Harveyized steel, 5 feet deep, of which 2 feet is above the water at ordinary draught; the thickness of the upper part of this belt amidships is 14 inches, and of the lower part 6 inches, while the whole belt tapers at the extremities to 4 inches; there is also a 1·5-inch armoured deck, extending the whole length of the ship. The two turrets are protected by 8·2-inch plates of hardened steel, and work inside a barbette protected by 7-inch steel, into which lead the armoured ammunition tubes, etc. The armament consists of two 24-centimetre (9·4-inch) Armstrongs, mounted in the turrets, one forward and one aft, with an arc of training of 250°; the turrets can be worked either by hand or electricity, while the ammunition hoists are also worked by electricity; there are four 4·7-inch Q.F. guns in small casemates, protected by 2·9-inch armour—one on each beam immediately abaft the fore turret, and one on each beam immediately before the after turret, with two 6-inch howitzers, mounted one forward and one aft on the spar-deck, and six 6-pounder and 1-pounder Q.F. guns, with two submerged torpedo-tubes. The conning tower is protected by 4-inch armour, as are also all the combings of the openings through the armoured deck.

The torpedo-cruiser "Tamoyo," of 1,000 tons displacement, 7,000-I.H.P., and 23 knots speed, was launched from the Germania Yard at Kiel on the 26th May. She is 269 feet long, with a beam of 28 feet 10 inches, and her armament will consist of two 3·9-inch, six 2·2-inch, two 1·4-inch guns (all Q.F.), with two machine guns.—*Le Yacht.*

FRANCE.—The following are the principal appointments which have been made: Capitaine de Vaisseau—P. A. B. Hennique to "Valmy"; Capitaine de Frégate—E. F. A. Corrad to "Faucon".—*Le Journal Officiel.*

The new first-class battle-ship "Charlemagne" has made two further official trials at full speed, which have been very successful; at the first, under natural draught, the engines developed 11,460-I.H.P., making 119·6 revolutions, which

gave a mean speed of 17·2 knots with a coal consumption of 744 grammes per H.P. per hour; in the second trial, under forced draught, the engines developed 15,295-I.H.P. (some 750-H.P. in excess of the contract), giving a mean speed of 18·1 knots. The new first-class battle-ship "Gaulois" has successfully concluded her preliminary trials; with the engines developing 9,100-I.H.P., making 113 revolutions, a mean speed of 16·1 knots was maintained, with a coal consumption of 670 grammes per H.P. per hour; with the engines developing 13,400-I.H.P., a mean speed of 17·7 knots was maintained, the engines making 121 revolutions with a coal consumption of 728 grammes per H.P. per hour. Commenting on these two ships and their sister the "Saint Louis," a writer in the *Yacht* considers that the system of mounting the heavy guns in pairs in closed turrets is wrong, and that the system previously in vogue in the French Navy, before these ships were designed, of mounting the four heavy guns, one forward, one aft, and one on each beam, is decidedly to be preferred; and he states that in the new battle-ships, soon to be laid down, the old system of mounting the heavy guns will be reverted to; he also considers that the secondary batteries of the "Charlemagne" and her sisters are not so well protected as in the ships of the "Masséna" class, and he states that in the "Suffren" and her sister, here again the old system is to be reverted to, and the guns of the secondary battery will be mounted in small turrets instead of in a casemated battery as in the "Charlemagne" class. The new torpedo-aviso "Dunois" has commenced her trials at Cherbourg; with the engines developing 2,200-I.H.P., and making 163 revolutions, a speed of 17·2 was made on the measured mile; under forced draught the engines are to develop 6,400-I.H.P., giving a speed of 23 knots. The first-class battle-ship "Amiral-Baudin," having completed her repairs, etc., made a successful full-speed natural-draught trial before leaving Brest for Toulon; with the engines developing 6,408-I.H.P., and making 69 revolutions, a speed of 14·5 knots was made on the measured mile, with a coal consumption of 929 grammes per H.P. per hour; this result is considered very satisfactory, as when the ship was new, during her trial trips in 1888, she only made 14·6 knots under natural draught; she arrived at Toulon on the 9th ult., and has taken the place in the Reserve Division of the "Courbet," which ship has been placed in the 2nd Category of the Reserve at Toulon for some important modifications in her armament; four 27·4-centimetre (10·8-inch) guns, model 1893, are to be substituted for the four 34-centimetre (13·3-inch) guns, model 1875, in her redoubt, while four 24-centimetre (9·3-inch) guns, model 1893, will be mounted on the upper deck in place of the four 27·4-centimetre (10·8-inch) guns now there. The work of transforming the old cuirassé de croisière "Victorieuse" into a torpedo-dépôt ship has been completed, and the ship has been carrying out some trials in her new capacity off Toulon. In spite of the accident to one of her boilers, the new first-class cruiser "D'Entrecasteaux" has been continuing her trials off Toulon; with the engines developing 5,300-I.H.P., and making 82 revolutions, the speed as measured on the mile was 15·4; her guns have also been successfully tried.

On account of the accident to the "Hoche" when she touched an unknown rock in Quiberon Bay, the Minister of Marine has signed a decree offering a reward of 50 francs to any fisherman or seaman who will give information regarding any rock or shoal at present not marked on the official charts of the coasts of France and Algeria.

The damage to the "Hoche" has been found to be more serious than was at first supposed. The bottom plates for a length of 198 feet will have to be removed, in many places for two streaks; the frames are twisted from one end to the other, and the keel will have to be removed; 200 men are working on her overtime; and the repairs will take two months. In view of the above, it has been decided to proceed with the changing of the boilers at once, new boilers for the ship having been approved in the budget of 1898; the vessel is therefore to be

placed in the 2nd Category of the Reserve, and will not be available for service for more than a year.

The court-martial on Lieutenant Benoit for the loss of the torpedo-boat "Ariel," sunk by collision with the cruiser "Friant" on 28th March last, assembled at Brest on 4th June. The statements of the witnesses were all very favourable as to the conduct of Lieutenant Benoit, eulogising his cool behaviour after the accident, and he was unanimously acquitted and complimented by the President. Nothing has been stated as to whether the "Friant" was to blame or not. The following rewards have been granted to the crew of the "Ariel":—An official letter highly commending the conduct of Enseigne Florenville and Engineers Adam and Mahéas; a second-class silver medal to Quartermaster Moal and Helmsman Leseigneur; promotion to a higher rating for 2nd class Torpedo-artificer Ponthon; notation for early promotion for Quartermaster-artificer Girard. The Maritime Prefect at Brest has arranged a contract for refloating the "Ariel," it is to last for one year, and the engineer will receive £3,000 if the ship is refloated within the time. The number of new vessels that will be commenced, continued or finished, during 1898 is 91 with a tonnage of 242,465 tons. The constructive work being carried out on 31st December last was:—7 battle-ships, 8 armoured cruisers, 1 avisos, 10 torpedo-boat destroyers, 1 sea-going torpedo-boat, 1 gun-boat, 1 submarine and 30 ordinary torpedo-boats. To this list must now be added the new constructions to be commenced in 1898, namely:—1 battle-ship of 12,000 tons, 3 armoured cruisers of 9,500 tons, 5 sea-going torpedo-boats of 150 tons, and 6 torpedo-boats.

The Naval Manœuvres.—It has been decided that the Naval Manœuvres in the Mediterranean this year will be divided into four periods, lasting in all twenty-five days. They began on the 5th inst. and will conclude on the 30th inst. The Active and Reserve Squadrons of the Mediterranean Fleet, as well as the *Défenses-Mobiles* of the Mediterranean coast, are taking part in the manœuvres, and their crews have been brought up to their full complements, as far as possible, by the reservists who have been called out. The whole force, which is under the command of Vice-Admiral Humann, is composed of the following ships:—

First-class battle-ships—"Brennus" (flag-ship of Commander-in-Chief), "Jauréguiberry," "Carnot," "Magenta," "Charles-Martel" (flag-ship of Rear-Admiral Dieulourard), "Formidable," "Neptune," "Marceau," "Amiral-Duperré" (flag-ship of Rear-Admiral Godin), "Amiral-Baudin." First-class armoured cruisers—"Latouche-Tréville," "Chazny." Second-class cruisers—"Cassard," "D'Assas." Third-class cruisers—"Lalande," "Lavoisier," "Milan." Torpedo-cruiser—"Condor." Torpedo-dépôt cruiser—"Foudre." Torpilleurs-de-haute-mer—"Flibustier," "Forban," "Kabyle," "Sarrazin," "Éclair," "Orage," "Chevalier," with the torpedo-aviso "Lévrier" as senior officer's ship of the flotilla. A grand total of 27 vessels of all classes.

The first period will last from the 5th to the 8th July, the fleet making its headquarters in the roadstead of Salins d'Hyères. The time will be occupied in various drills, and in experiments for coaling ships with the Temperley apparatus, which has been fitted to an old transport, the "Japon," which will be used as a collier, while experiments with a captive balloon will be carried out from the "Foudre." Attacks will also be made on the fleet by the torpedo-boats of the *Défense-Mobile* consisting of the "Déroulède" and Nos. 168, 190, 198, 98, 134, 135, 132, 143, 173, and 176. The flotilla will be under the command of Capitaine de frégate Goudot. Collapsible heads will be fitted to the torpedoes.

The second period will extend from the 8th to the 15th July. The whole

squadron is to enter and moor in the new harbour of Biserta. During the Fêtes of the 14th July, it will be divided into three groups, which will be stationed at Algiers, Biserta, and Tunis respectively. For the manœuvres the fleet will be divided into three squadrons, to be known as squadrons A, B, and C. B will represent the enemy, and will consist of the "Amiral-Duperré" (Rear-Admiral Godin), "Amiral-Baudin," "Formidable," and "Orage," with headquarters at Tunis. The French fleet will consist of A composed of the remaining battle-ships and C, which will be composed of the cruisers under Rear-Admiral Dieulouard.

The third period, lasting from the 15th to the 20th inst., will be devoted to scouting by day and night.

The fourth period will last from the 20th to the 25th inst., the theme being an attack on the coasts of Provence, which are to be defended by the land forces. No details have yet been published, but the *Défenses-Mobiles* of the different coast districts will take part in the operations. The part of the Mediterranean where the ships will manœuvre during the operations will be between Mers-el-Kebir and Cape Rosas on the west, to Cape Bon and Cape Martin on the east.

The Manœuvres in the Channel.—For the purpose of the manœuvres the Squadron of the North will be formed into two divisions, under the command of Vice-Admiral Barrera and Rear-Admiral Penfentenyo respectively.

The Squadron is composed as follows:—

First-class battle-ship—"Masséna" (flag-ship of Commander-in-Chief).

Coast-defence battle-ships—"Bouvines" (flag-ship of Rear-Admiral Penfentenyo), "Valmy," "Jemmapes," "Amiral-Tréhouart."

First-class armoured cruisers—"Pothuau," "Dupuy-de-Lôme."

Second-class cruiser—"Catinat."

Third-class cruiser—"Surcouf."

Torpedo-cruiser—"Épervier."

Torpedo-aviso—"Cassini."

Torpilleurs-de-haute-mer—"Mangini," "Aquilone."

Some first-class torpedo-boats will also be mobilised for the occasion. The headquarters of the 1st Division, consisting of the "Masséna," "Valmy," "Amiral-Tréhouart," "Dupuy-de-Lôme," "Surcouf," "Épervier," and "Mangini," will be at Brest; and the 2nd, consisting of the "Bouvines," "Jemmapes," "Pothuau," "Catinat," "Cassini," and "Aquilone," at Cherbourg. On the 15th July the two divisions will rendezvous off Brest and will cruise together until the end of the month; scouting exercises will be carried on and attacks made on the squadron by the torpedo-boat flotillas of the *Défenses-Mobiles*, consisting of the "Alarme," Nos. 187, 182, 138, 92, 83, 73, 145, and 140, under the command of Capitaine de frégate Le Pelletier des Ravinières; the torpedoes being fitted with collapsible heads. On the return of the squadron to Brest, an attempt will be made to force the goulet entrance, which will be defended by the land forces.—*Le Temps* and *Le Yacht*.

THE "JEANNE D'ARC."

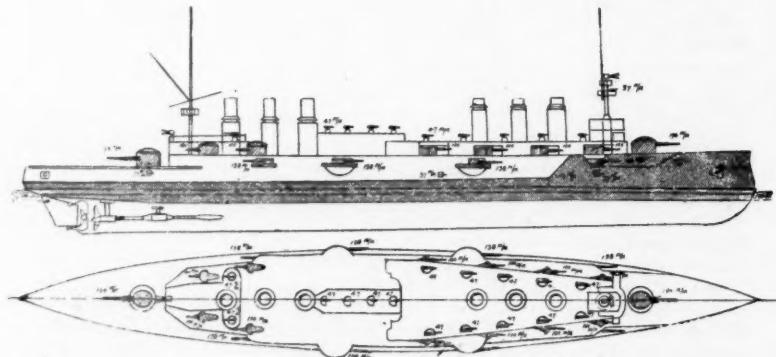
The armoured cruiser "Jeanne d'Arc" was laid down at Toulon in 1895.

Her principal dimensions are as follows:—

Length over all	... 145 metres	... 475·7 feet
Beam	... 19·40	" 63·6 "
Mean draught	... 7·52	" 24·6 "
Maximum	... 8·12	" 26·6 "
Coal supply at this draught	... 1,400 tons	
Displacement	... 11,300	"

The hull is divided as in the most recent battle-ships. The vital parts are enclosed by the lower protective deck; the protective section is comprised between two armour decks, the superstructure built upon it. This protective

section is roughly similar to that of the latest English battle-ships, except that the thickness of the armour is much less. The lower protective deck is placed very nearly at the water-line level amidships, and slopes at the sides to 1·5 metres below this level, that is, to the lower edge of the side armour. The latter is arranged in two courses, one of thick armour, of which the upper edge is 7 metre above the line of flotation reaching down to the protective deck, the other of thinner armour above this belt extending up to the upper protective deck. Forward this belt reaches up to the upper deck. The lower belt has a thickness of about 150 millimetres at its upper edge but diminishes in thickness below the water-line and towards the ends of the ship. The upper belt is about 75 millimetres thick at its junction with the lower one. The protective deck proper is 50 millimetres thick on the slopes, the deck above is formed in two thicknesses of steel plating. The side armour is supported by a backing of teak. The side protection is completed by a cofferdam behind the armour and a water-tight bulkhead behind the cofferdam. It serves as a collector for water coming through breaches in the armour, and numerous water-ways are fitted to conduct this water direct to the hold. Between these two longitudinal bulkheads parallel to the sides and the two steel decks is the cellular section properly so called. These compartments are empty, or serve as coal bunkers or water tanks, etc. All the tubes for shot hoists, the funnels, ventilators, etc., which traverse this cellular section are protected by an annular cofferdam for their whole height and by armour for their lower parts. Above the armour decks are the upper



Profile and Deck Plans of the "Jeanne d'Arc."

deck extending the whole length of the ship, the spar deck from the after turret right forward, a small bridge around the mizen-mast, and a large bridge from the middle of the ship to the forward turret. This latter is continued aft by a smaller central bridge somewhat raised above it. On the upper deck are placed the 14-centimetre Q.F. guns; on the spar deck the 10-centimetre and on the bridges the guns of small calibre. The conning tower is placed on the forward bridge between the forecastle and forward turret; above it are placed the navigating bridge and chart-house. Below the bridges are placed the cooking-houses, etc.; the officers' quarters are below the upper deck aft, and those of the admiral and superior officers under the spar deck. The armament comprises two 19-centimetre guns in turrets at each end of the ship; eight 14-centimetre Q.F. guns placed four in the angles formed at each end of the upper deck, and four on projecting platforms at the sides; six 100-millimetre Q.F. guns on the spar deck, sixteen 47-millimetre

on the bridges ; eight 37-millimetre, of which six on the upper deck and two in the fighting top on the foremast ; two launching tubes for 18-inch torpedoes.

The fixed part as well as the moving parts of the turrets for the 19-centimetre guns are armoured, and the latter is covered with an armoured dome ; the platform is also armoured. These turrets are entirely worked by electricity. The 14-centimetre guns are in casemates ; the faces of these casemates protected by armour plating, the other parts by thick sheet-iron. All the guns firing through large ports also carry a mask in the form of the letter U, armoured on front and sides. The 100-millimetre guns are protected by a revolving shield, which completely shelters the gun's crew and forms a perfect little turret ; these shields are armoured overhead, front, and sides. Thanks to these shields, which protect the crews from the flare of the neighbouring guns, the artillery of the "Jeanne d'Arc" is really formidable on all bearings. One 19-centimetre, four 14-centimetre, eight 10-centimetre, ten 47-millimetre, and four 37-millimetre can be used in chase ; one 19-centimetre, four 14-centimetre, four 10-centimetre, two 47-millimetre, and two 37-millimetre in retreat ; two 19-centimetre, four 14-centimetre, six 10-centimetre, ten 47-millimetre, and four 37-millimetre on each broadside. It would be difficult to imagine a more ingenious arrangement.

The installation of the magazines has been a source of difficulty on account of the large space occupied by the propelling machinery, nearly three-quarters the length of the ship in the most central part. The magazines for the 19-centimetre guns are below the turrets at the two extremities of the engine and boiler rooms. The other magazines, for the medium and small-calibre guns, are under the protective deck, in the wake of the boiler-rooms, alongside the coal bunkers, and above the transverse compartment for the torpedo-tubes, which is placed between the forward stokeholds and the engine-rooms. All these magazines communicate with each other by means of a corridor outside the engine and boiler-room longitudinal bulkheads. The two corridors, starboard and port, communicate with each other at their extremities through the 14-centimetre magazines, and in the centre by those placed above the torpedo-rooms. A railway provides for the transport of the cartridges and projectiles from one end of the ship to the other. This arrangement was proposed in France some years ago, but was adopted for the first time on the English battle-ships of the "Majestic" class. It facilitates and assures the ammunition supply, as each gun can be served from any magazine. The projectiles for the small-calibre guns are hoisted to the upper deck by electric hoists. The propelling machinery of the "Jeanne d'Arc" consists of three engines placed in the centre of the ship, between two groups of boiler-rooms. The evaporative apparatus comprises 48 Guyot du Temple boilers, with a total heating surface of 152 square metres ; the boilers are arranged in two groups of stokeholds, four in each group. Each group is furnished with three smoke stacks, the centre one being placed at the intersection of the bulkheads, dividing each group into four compartments. The three engines are in separate water-tight compartments, one amidships and one each side. The engines and boilers are constructed by the Indret firm.

The ventilation of the different compartments under the upper steel deck is effected by means of electrically-driven ventilators, the air shafts being placed between the funnels. Electricity has been largely employed for working the auxiliary machinery ; the turrets, shot hoists, ventilators, and steering gear are so worked. Four dynamos provide the current for the lighting and other purposes ; six electric light projectors are fitted. The clearing of the bilges in case of injury below the water-line is effected by three Thirion pumps of 600 tons capacity. We have already said that the normal supply of coals is 1,400 tons, but in view of the great height of the armour belt the ship could be over-loaded without sensibly impairing the efficiency of her protection, and by utilising the compartments between the two protective decks, which might be filled with coals, the total supply might be raised to 2,100 tons. With 1,400 tons the distance travelled at

10 knots would be 9,000 miles ; and with 2,100 tons, 13,500 miles. The normal supply would give a range of 1,260 miles at 23 knots, that is, full speed for 55 hours ; the supplementary supply would increase the duration to 83 hours. Besides this provision of coals, the "Jeanne d'Arc" could also carry a certain quantity of petroleum in special magazines should this mode of firing be found to give good results on trial.

This short description shows that the "Jeanne d'Arc" is an interesting solution of the problem which consists in uniting in a vessel of moderate displacement the qualities of high speed, powerful artillery, and efficient protection. It would appear very difficult to do better, in design at least, for the practical value of this solution depends partly on the manner in which the boilers behave on actual service. It is more than probable that there will be nothing to desire in this respect as regards power developed, but in the matter of endurance on continued service, and above all in the maintenance of efficiency during long periods in reserve, there may be cause for some misgivings. To reduce, under pretext of economy, the displacement of a ship is a temptation to be resisted, for with delicacy of construction the cost of maintenance will more than compensate for the increased first cost of a larger ship of more robust construction, and therefore less difficult and costly to maintain in efficiency. Having already spoken in the course of other articles on the military *rôle* which the "Jeanne d'Arc" would have to play, we have only to add a few words on this subject. The "Jeanne d'Arc" is a cruiser of the vanguard, which possesses all the qualities requisite to seek the enemy, come into touch with him, and to maintain it. Her great speed is a protection against destroyers ; her small artillery is also admirably arranged to keep them at a distance ; her protection and armament are sufficient to enable her to fight for a short time against a battle-ship, and is more powerful than that of any cruiser of any nation yet afloat. If we, however, regard the "Jeanne d'Arc" as a ship of the fighting line, as a unit of the homogeneous fleet recognised by Admiral Fournier, for example, some defects are apparent. The principal is the insufficient protection of the artillery. The casemates of the 14-centimetre guns are insufficiently armoured. Explosive shells can penetrate between the upper protective or steel deck and the upper deck and explode under the 14-centimetre and 10-centimetre guns. These criticisms, which are relative only, are weakened when the "Jeanne d'Arc" is compared with the large cruisers which have preceded her abroad. We see then how powerful this vessel is in proportion to her displacement, and how difficult it has been to combine these different elements of power. The "Powerful" and "Terrible," the largest cruisers actually afloat, displace 2,900 tons more than the "Jeanne d'Arc," and have a knot less speed. They carry no side armour. Their armament, two 23-centimetre, twelve 15-centimetre, eighteen 12-pounders, is not much more powerful. They carry about the same normal supply of coals. The English cruisers of the "Diadem" class only displace 300 tons less than the "Jeanne d'Arc," they carry only 1,000 tons of coal, have no side armour, and only an estimated speed of 20·5 knots ; their armament, sixteen 15-centimetre, and fourteen 12-pounders, is about equal to the "Jeanne d'Arc." The American armoured cruisers "New York" and "Brooklyn" displace respectively 8,200 and 9,300 tons. They are, therefore, smaller than the "Jeanne d'Arc," but they only carry 750 and 900 tons of coal, their speed is only 21 knots, and their side armour only 100 millimetres thick. If their artillery, six 20-centimetre and twelve 100-millimetre for the "New York," eight 20-centimetre and twelve 13-centimetre for the "Brooklyn," are superior in calibre to the guns of the "Jeanne d'Arc," they are not so well disposed. Their bow and stern turrets each carry two guns. The Russian armoured cruiser "Rurik" displaces 11,000 tons, and has a speed of only 18 knots ; her side armour extends over only half of her length. Her artillery, four 20-centimetre and sixteen 15-centimetre, is superior to that of the "Jeanne d'Arc," it is true, but it is not so well protected. It is fair to add that the "Rurik" carries 2,000

tons of coal. Finally, the German ironclad *Ersatz "Leipzig,"* which strictly may be classed as an armoured cruiser, displaces 10,650 tons, has a speed of 19 knots only, and a coal supply of only 1,000 tons. Her armament, four 24-centimetre, and twelve 14-centimetre guns, is a little more powerful than that of the "Jeanne d'Arc," her side armour is also a little thicker, 200 millimetres, but consists of a belt extending very little above the line of flotation. This short comparison will prove that the "Jeanne d'Arc" is one of the most powerful and original ships which has been constructed in Europe for the last fifteen years. Her design is by the Marine Board, under M. Bertin's directions.—*Le Yacht.*

ITALY.—The following are the principal appointments which have been made: Vice-Admirals—N. Canevaro to be Minister of Marine; E. Accinni to be Commander-in-Chief of the 1st Maritime Department (Spezia); C. Morin to Command of the Active Squadron; G. Magnaghi to Command of the Reserve Squadron. Rear-Admiral—G. B. Mirabello to be Second-in-Command of the Active Squadron; C. Bettolo to Command of Naval Forces in the Levant—*Gazzetta Ufficiale.*

The following is the distribution of the different squadrons from the 1st April:—

Levant Squadron.

First-class battle-ships—"Sardegna" (flag-ship of Rear-Admiral Bettolo).
Second-class cruiser—"Etruria."
Torpedo-cruisers—"Aretusa," "Montebello," "Monzambano."
First-class gun-boat—"Volturno."
Store-ship—"Tevere."

Active Squadron.

First-class battle-ships—"Lepanto" (flag-ship of Vice-Admiral Morin), "Morosini" (flag-ship of Rear-Admiral Mirabello).
Second-class battle-ships—"Affondatore," "Maria Pia," "Castelfidardo."
Second-class cruisers—"Piemonte," "Lombardia," "Dogali."
Torpedo-cruisers—"Calatafimi," "Goito."
First-class torpedo-boats—Nos. 101, 112, 147, 96, 73, 152.

Reserve Squadron.

First-class battle-ships—"Sicilia" (flag-ship of Vice-Admiral Magnaghi), "Re Umberto" (flag-ship of Rear-Admiral Palumbo), "Dandolo," "Andrea Dorea," "Ruggiero di Lauria."
Second-class cruisers—"Vesuvio," "Fieramosca," "Etruria," "Liguria," "Elba."
Torpedo-cruisers—"Partenope," "Urania."

Red Sea and Indian Ocean.

Cruiser-corvette—"Cristoforo Colombo."
First-class gun-boats—"Governolo," "Veniero."

America.

First-class armoured cruiser—"Carlo Alberto" (flag-ship of Admiral C. Candiani).
Second-class cruisers—"Umbria," "Calabria," "Etna," "Giovanni Bausan."

China.

First-class armoured-cruiser—"Marco Polo."

As regards the Reserve Squadron, it has been decided that the ships shall be divided into two classes:—

1. "Armamento ridotto," those considered ready for sea in 24 hours.
2. "Riserva," those under repair and not ready for immediate sea service.

The following vessels have been placed in "armamento ridotto":—

First-class battle-ships—"Sicilia," "Re Umberto," "Lauria."
Torpedo-cruisers—"Partenope," "Urania."

The new first-class armoured cruiser "Carlo Alberto," of 6,500 tons displacement and 13,500-I.H.P., has been making her official trials at Spezia ; with 86 revolutions of the engines, a speed of 17 knots was obtained ; at her forced-draught trial, the engines developed 13,266-I.H.P., giving a speed of 19 knots, a knot below the contemplated speed. In view of the difficulty of obtaining the necessary funds for building new battle-ships, the Minister of Marine has determined that some of the older ships are to be modernised as far as possible, as has been done with the "Duilio" and "Dandolo." The three new battle-ships which are to be constructed will be laid down at Spezia, Castellamare, and Venice, respectively ; they are to be 410 feet long, with a beam of 74 feet 6 inches, and a displacement of 13,000 tons, to have a speed of 20 knots, and are to be completed under five years ; the one to be built at Castellamare is to be called the "Principessa Elena," and the other two will be called "Benedetto Brin" and "Ammiraglio Racchia" respectively. Two new first-class armoured cruisers, to take the place of the "Garibaldi" and "Varese," sold to the Argentine Government, are also to be built by contract at Leghorn and Genoa ; they are to be 342 feet long, have a displacement of 7,000 tons, will have a more powerful armament than their predecessors, and will be fitted with water-tube boilers, to give a speed of 23 knots. Permission has also been given to the firm of Orlando Bros., at Leghorn, to sell to the Argentine Government the "Varese," now completing for the Italian Navy at that yard, which will be the second ship of that name sold to that Government. The company have at the same time agreed to build and deliver to the Government in 18 months another cruiser of the same type, but fitted with water-tube boilers, which will develop under forced draught 500 more I.H.P. than had been arranged for in the first contract. The new torpedo-boat destroyer building at Odero, Sestri Ponente, is to be called the "Fulmine," and the two torpilleurs-de-haute-mer building at the Ansaldo Yard, Sampierdarena, are to be called the "Pellicano" and "Condore." The Thornycroft torpedo-boats Nos. 4, 7, 17, 20, and 21, with the White vedette boats Nos. 5, 7, and 14, are to be struck off the active list of the fleet, and to be stationed at lakes Gardia, Lugano, and the Venetian lagoon for guard duties.

During the coming year, the construction of 24 torpedo-boats of a new type, to replace that number of old boats which have been struck off the list, is to be taken in hand.—*Rivista Nautica*.

By the death of Signor Brin, on the 24th May, 1898, Italy has lost one of her foremost statesmen, and the Italian Navy of to-day its most illustrious creator and constructor—a man of world-wide reputation as a naval architect.

The late Signor Brin was a man of genius and action, and was able to carry into execution the plans of another man of genius, Admiral Saint Bon, and no one acquainted with the history of naval construction for the last quarter of a century can fail to place him among the greatest naval constructors and engineers of the world.

His chief aim was that in matters of construction, as in other respects, the Italian Navy should be the work of the Italian nation, independent of all foreign help, and, in fact, that in this respect, as in others, Italy *farebbe da se*.

In this patriotic wish to encourage and develop Italian industries he entirely succeeded. For the manufacture of armour plates he organised the ironworks of Terni, for guns he induced Messrs. Armstrong to establish the gun-factories of Pozzuoli, and for the production of marine engines and machinery he obtained the co-operation of the English firms of Maudslay and Hawthorn in instructing and directing the Italian workmen of Messrs. Ansaldo and Guppy.

Benedetto Brin died at a comparatively early age, but full of honour, having lived to fulfil his mission. He was born at Turin on 17th May, 1835, and was consequently in his 64th year.

He was appointed an engineer student in August, 1853, and passing through

the various grades of engineer and constructor, he became a member of the Superior Council of the Navy in March, 1867 ; he was subsequently appointed Director of Naval Construction at Naples in March, 1873 ; Director-General of the *matériel* of the Navy in August, 1873 ; Minister and Secretary of State for the Navy March, 1878, to December, 1878, and again from March, 1884, to February, 1891. His next appointment was as Minister for Foreign Affairs from May, 1892, to December, 1893 ; and finally he was again appointed Minister of the Navy in March, 1896, and was still acting as such at the time of his death.

A list of the 26 ships which he designed is almost a list of the Italian Navy, but the two most important of his constructions, and which may be considered the Alpha and Omega of his creations, are the battle-ships "Duilio," of 11,200 tons, designed in 1873, and the "Sardegna," of 13,400 tons, designed in 1884 ; and there are also now building from his plans three battle-ships of 12,800 tons — posthumous works, which no doubt will still further add to his reputation.

The funeral took place at Rome on the 26th May, and was attended by all the troops of the garrison and by detachments of seamen from the ships at Naples and Spezia, the members of the Diplomatic Corps, all the State functionaries, and the members of the Legislature were also present, and the King was represented by H.R.H. the Duke of Genoa. Among the wreaths sent, that of the German Emperor was especially conspicuous, bearing the inscription, "All' amico Benedetto Brin.—L'imperatore Guglielmo."

Such an imposing ceremony and such signs of universal sorrow and respect had not been seen in Rome since the funeral of King Victor Emanuel.—*Italia Marinara.*

JAPAN.—The Government have issued the following list and classification of the fleet :—

First-class battle-ships	...	...	...	...	4
Second-class battle-ships	...	...	...	...	2
First-class armoured cruisers	...	...	...	...	4
Second-class protected cruisers	...	...	...	...	9
Third-class protected cruisers	...	...	...	...	5
Third-class coast-defence ships	...	...	...	...	10
First-class gun-boats...	...	...	...	...	2
Second-class gun-boats	...	...	...	...	15
Despatch-vessels	...	...	...	...	4
Torpedo-boat destroyers	...	...	...	...	8
Torpedo-boats first-class	...	...	...	...	6
Torpedo-boats second-class	...	...	...	...	4
Torpedo-boats third-class	...	...	...	...	21
Torpedo-boat fourth-class	...	...	...	...	1

The above list includes vessels at present actually under construction.

The "Chitose," a new second-class cruiser for the Japanese Government, now completing at the Union Iron Works, San Francisco, Cal., is a substantial duplication of the "Buenos Aires," built at Elswick in 1895 for the Argentine Republic, with some modifications in armament, and may be said to be a development of the "Yoshino." The general features and principal dimensions are :—Length, 405 feet 2 inches ; beam, 49 feet ; draught, 17 feet 7.25 inches ; displacement, 4,760 tons ; coal supply, 350 tons ; bunker capacity, 1,000 tons ; estimated maximum I.H.P., 15,000 ; estimated maximum speed, 22.5 knots ; complement, 405 men. A protective deck, reaching from side to side, and running from the stem to the stern, completely covers the vitals. On the flat portions of this deck it is 1½ inches thick, but on the slopes at the sides it is increased to 4½ inches. All woodwork is to be fireproofed by the present prevailing electrical process. The ship will be driven by twin screws, actuated by two sets of triple-expansion engines of the four-cylinder type, having cylinders of 40 inches, 60 inches,

66 inches, and 68 inches, with a common stroke of 36 inches. Steam will be supplied by eight boilers, having a total grate surface of 792 square feet, and a total heating surface of 22,440 square feet; working pressure about 180 lbs. The bunkers are so arranged that the coal comes in directly on the fire-room floor.

The principal offensive power of the ship is centred in a very formidable battery of Q.F. guns. In the main battery there are two 8-inch and ten 4·7-inch Q.F. guns; and in the secondary battery there are twelve 12-pounders and six 2½-pounders. One 8-inch gun is mounted on the forecastle deck, the other on the poop deck, and each has a commanding arc of fire of 270°. The gun crews are protected by shields on each piece. These 8-inch guns are of the Armstrong type, and, together with the rest of the batteries, will be purchased in England and placed on board the ship when she reaches Japan. The 4·7-inch guns are mounted in sponsons on the main deck, and are sheltered by shields and the 3-inch sponson armour. The forward gun on each side and the after gun on each side have separately an arc of fire of 130°, the forward guns being able to fire dead ahead, and the after guns being able to fire dead astern. The rest of the 4·7-inch guns, and such of the 12-pounders as are sandwiched between on the main deck, have arcs of fire of 100°. The 12-pounders have the same 3-inch sponson armour about them. The four remaining 12-pounders are mounted forward and aft in sponsons near the bow and stern. The 2½-pounders are placed on the hammock berthing and up in the military tops. The 8-inch and the 4·7-inch guns will be supplied with ammunition by electrical hoists, while the supplies for the smaller guns will be raised by whips from the magazines. A torpedo outfit of five tubes has been called for, two on each broadside and one in the stem, but there is reason to believe the bow tube will be removed. The value of such tubes has long been known to be more than questionable. The ship will be lighted by electricity, and ventilated by natural and artificial means; and the fittings, as far as consistent with the Japanese regulations, will conform to the best American practice. The contract price is reported to be something like £205,000.—*Army and Navy Journal*.

An important addition has been made to the Imperial Navy in the new second-class protected cruiser "Takasago," built by the Elswick firm, and which left Spithead on the 1st June for Japanese waters.

Her dimensions are as follows:—Length between perpendiculars, 360 feet; beam, 46 feet 6 inches; draught, 17 feet; displacement, 4,300 tons; I.H.P., maximum, 15,500; estimated speed, 24 knots; coal bunker capacity, 1,000 tons. This last particular is not, however, we assume, her coal capacity at normal draught; but 1,000 tons would probably bring her down at least 2 feet in the water, making her draught about 19 feet. Nevertheless, the "Takasago" has a very good percentage as to co-efficient of fineness below the water-line, it being 0·53 of the solid rectangle, or slightly higher than that found in the "Edgar" type. Moreover, the vertical character of the lines just above the water-line area lends itself to the carriage of additional fuel without undue immersion, and even a draught of 19 feet is only equal to that of the English "Charybdis," a cruiser of almost identical displacement. This vessel is protected by a turtle-back armoured deck, extending from stem to stern, 2 inches on the flat to 4½ inches on the slopes thick. There are four above-water torpedo-tubes, on the beam and quarter, and one fixed bow tube.

The armament of the "Takasago" is of an exceptionally powerful character, when we consider her very moderate displacement. It comprises two 8-inch, ten 4·7-inch, twelve 12-pounders, and six 2½-pounder guns, all being of quick-firing nature. The disposition of the armament has been uncommonly good throughout. The two 8-inch Q.F. guns are mounted upon the forecastle and poop-deck, pointing fore and aft, with extensive arcs of training, and are well protected over their breech portions by stout Harveyized steel hoods; they are at the same height above the

water-line. All the 4·7-inch guns are upon the upper deck, five on either beam, the forward and aft pairs being within sponsoned positions, so as to be capable of being trained axially. All are protected with stout steel shields. Upon the summit of these sponsons, on the upper deck, are four shielded 12-pounder guns of similar extent of training. There are eight 12-pounders upon the upper deck, within special shields of considerable protection capacity, so as to secure the gun's crews. The fighting tops are not circular, as in British war-vessels, but kidney-shaped, one lobe being on either side of the mast-head. Each lobe has a 2½-pounder mounted within it, upon a pedestal, which revolves with a capacious steel shield to protect the men working the gun. These guns have a special automatic breech opening mechanism. Thus the problem of protecting all the crews at the various gun positions has been practically solved. The kidney-shaped tops are supported and stiffened with strong steel brackets, so as to sustain the weights of guns with mountings and shields. We should fear, however, that their weight in a sea-way would somewhat impair the stiffness of so narrow a vessel, particularly as the 8-inch guns are carried at a great height, and their weight being over 15 tons, independently of the mounting.

The axial fire fore and aft of the "Takasago" is very remarkable in hitting power. The number of guns which can be trained in this direction, either way, is as follows, and their hitting energy is also given for five minutes' consecutive fire:—

Axially. Forward or aft.	Rounds in five minutes.	Working energy in foot-tons.
One 8-inch Q.F. gun	... 15 ...	111,195
Two 4·7-inch Q.F. guns	... 50 ...	72,100
Two 12-pounders	... 100 ...	42,000
Two 2½-pounders	... 200 ...	14,000
		239,295

The aggregate amount of fire energy which would be developed by five minutes' consecutive fire from all the guns of this cruiser would be 876,890, or practically one million of foot-tons. This is by no means admitting of very rapid rates of firing, but with such only as have been obtained in ordinary practice.

A distinguishing feature of the "Takasago" is the absence of excessive superstructure, and the very modest proportion of cowls which is employed. Possibly artificial ventilation is resorted to in a larger measure than is the case upon British and most other war-vessels, but the difference is striking.

We conclude by giving a comparative statement of the various features of the "Takasago," and of the "Astræa," a vessel of equivalent type and displacement:—

	"Takasago."	"Astræa."
Length between perpendiculars, feet	360	320
Beam, feet	46½	49½
Draught, feet	17	19
Displacement, tons	4,300	4,360
Maximum H.P.	15,500	9,912
Normal coal capacity, tons	not known	400
Normal bunker capacity, tons	1,000	not known
Speed, knots, maximum	24	19½
Armament, guns	two 8-inch Q.F. ten 4·7-inch Q.F. twelve 12-pr. Q.F. six 2½-pr. Q.F.	two 6-inch Q.F. eight 4·7-inch Q.F. eight 6-pr. Q.F. one 3-pr. Q.F.

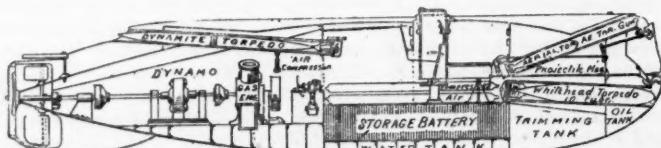
Aggregate gun power developed by five minutes' consecutive fire } 876,890 foot-tons. 601,400 foot-tons.

Showing an increased proportion of 50 per cent. of striking energy in foot-tons in favour of the Japanese cruiser. This is scarcely a pleasing reflection. The propelling engines are by Messrs. Humphrey and Tennant.—*Engineer.*

UNITED STATES.—Extraordinary interest attaches to the trials of the "Holland" submarine torpedo-boat which are now being carried out in New York Harbour, and it gives us much pleasure to state that the results thus far achieved have been very satisfactory.

The "Holland" submarine boat embodies the result of some twenty years of experimental work on the part of the designer, who firmly believes that this type is destined to become the most deadly weapon of future naval warfare. This is the first submarine boat of its type ever built and tested. Another and larger boat of the kind is now under construction for the Government at Baltimore, and is practically completed; but the progress upon it was so slow that Mr. Holland determined to build at once a smaller vessel for use in harbour defence. The Government vessel was described and illustrated in the *Scientific American* of April 25th, 1896. She is a cigar-shaped boat 85 feet long, $11\frac{1}{2}$ feet in diameter, and capable of 16 knots speed on the surface and 10 knots when submerged. Her displacement is 168 tons.

The "Holland" (as she is called) is much smaller, being only 55 feet long, $10\frac{1}{2}$ feet in diameter, and of 75 tons displacement. The steel hull is cigar-shaped, and approximates somewhat to the model of the Whitehead fish torpedo, being blunter at the head than the tail. Two sources of motive power are furnished, a gas engine being used at the surface and a motor run by storage batteries when the boat is submerged. The storage batteries, which are of great weight, are located amidships, down below the axis of the boat, and as their centre of gravity comes well below the centre of buoyancy of the hull, the boat is kept at all times on an even keel. Above the storage batteries on each side of the ship are located the compressed air tanks from which fresh air is supplied to the crew when the boat is submerged. The motive power is furnished by a gas engine and an electric motor, both of which operate a common shaft, the gas engine being located just ahead of the motor. The gas engine is used mainly when the boat is running at the surface and the motor when it is entirely submerged. This arrangement, it will be seen, enables the motor to be utilised as a generator for charging the batteries.



Section showing internal arrangement of the Submarine Boat "Holland."

The cellular bottom of the little vessel is utilised for the storage of the liquid fuel, and here are located the water-ballast tanks which assist in trimming and in the operation of diving or rising to the surface. With the tanks filled and all the crew aboard there is a reserve buoyancy of 250 lbs., and the boat is caused to sink by altering the pitch of the horizontal diving rudders, the forward motion of the vessel, combined with the downward pitch of the rudders, combining to force her below the surface. She is maintained at the required depth by means of delicate automatic mechanism, similar to that used in the automobile torpedo.

The offensive powers of the "Holland" are, considering the size and her methods of attack, far greater than those of any other engine of war, whether ashore or afloat. In the first place, she carries in her bow or nose an under-water discharge-tube for launching the deadly Whitehead torpedo. Of these she carries several stowed in a suitable chamber. They are automobile or self-propelling, carrying

their own compressed-air engines and a storage tank of compressed air. They are shot out of the bow by a small charge of gunpowder, and as they pass from the discharge-tube, a catch releases the little engines and starts the propellers. The torpedo then travels with the speed of the fastest torpedo-boat for a distance of from 600 to 1,000 yards. Automatic steering mechanism keeps the flying vessel at the proper depth and on a wonderfully true course.

In addition to the Whitehead torpedoes the "Holland" carries two other discharge-tubes for firing guncotton projectiles. Unlike the one just described, which lies in the longitudinal axis of the boat, these are upwardly inclined, one pointing forward and the other aft. The mouths of the tubes terminate at the ends of a kind of superstructure deck which is built up above the cylindrical portion of the boat and carries at the centre of its length an armour-plated conning tower. The mouth of each of these tubes is closed by a sliding cover which is operated by means of a worm and pinion controlled by shafts leading into the interior of the vessel. The forward tube is called an aerial torpedo gun. It is capable of throwing a 100-lb. guncotton shell a distance of three-quarters of a mile. The other tube, astern, is called an underwater torpedo gun, and it is capable of driving its shell with accuracy for a distance of 200 yards under water.

When the boat is at the surface of the water, she can be steered by observation through the port holes of the conning tower. When she sinks below the surface, a small tube, carrying at its top an inclined mirror or prism, in the manner of the camera lucida, will throw a picture of the surrounding waters upon a board in the conning tower. The vessel also carries a compass and an automatic gauge showing the depth below the surface.

In making an attack upon a ship the "Holland" would advance, with her small and scarcely discernible conning tower above water, until she was within range for the use of her aerial torpedo gun. A shell containing 100 lbs. of guncotton would be discharged, and she would at once sink below the surface, to avoid retaliation. At the moment of discharge an ingenious system of compensating weights will automatically admit to the tanks a sufficient amount of water to preserve the trim of the vessel. This is an entirely new device, and the "Holland" is the first submarine boat which has succeeded in overcoming the difficulty. When the boat had run up a little nearer to the hostile ship, she would discharge one, and if the first missed, two of her torpedoes. In the unlikely event of missing with the bow torpedoes, she would fire her rear torpedo gun at the enemy as it swept by overhead.

A series of tests with the vessel were carried out on March 27th, for the benefit of Lieutenant Sergeant of the Naval Auxiliary Board. The work was done in 30 feet of water, and gave full satisfaction both to Mr. Holland and the Government expert. The first trials consisted of a series of surface runs at a speed of 10 knots, in which the boat showed great manœuvring power, changing her course through 90° with astonishing rapidity.

The diving test was made at the same speed, and upon the diving rudders being thrown into position the boat buried her nose and went down at an angle of 15° with the surface. At a depth of 7 feet, as indicated by her flagpoles, she came to an even keel and ran forward steadily for several hundred yards. An ascent was then made, the boat coming up nose first at the same angle as she descended. The cover of the conning tower was then thrown open, and Mr. Holland announced that he would dive completely out of sight. This time she dived completely out of sight, the flagpoles disappearing altogether. No trace of the vessel was visible until she made her appearance suddenly at a point several hundred yards distant from the point at which the descent was made.

Later a test was made of the bow aerial torpedo gun, and with a reduced air pressure of 600 lbs. (as against the full pressure of 2,000 lbs. to the square mile) a dummy torpedo was thrown a distance of 500 yards.—*Scientific American*.

The attention of the Government has been called to St. Andrews Bay, Florida, as the possible site for a naval station for supp'y and repair. There are 12 miles of water there, with several safe and hidden anchorages and room for moving large vessels. The climate is fine, there are no outside dangers of approach, and the tide seldom runs as fast as 1 mile an hour. It is 62 miles over a level country to the junction of three large railways at Chattahoochee. There is no entrance to this remarkable body of water at present, but for small vessels; but one can be made at moderate cost. A canal would give a permanent entrance 30 feet deep at least with but 500 yards of sea jetties. The material for building the inside dams is on the ground. The War Department has reserved the Government ground at St. Andrews Bay needed for forts and the proposed canal. Objection is made to the Tortugas as the site for a floating dock because of the want of the land required there for forts and for the homes of workmen. The place is not defensible and there is danger from hurricanes. Key West is about as bad for defence, and has only 27 feet of water and no harbour. Algiers has deep water, but there are only 25 feet reliable up South Pass, according to our information. Pensacola has 30 feet inside, but only 22 feet on the bar, and the bar is almost hopeless, and the 30-foot water stops within sight and gunshot of the offing.—*Army and Navy Journal.*

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS DURING JUNE, 1898.

Field-Marshal H.R.H. the Prince of Wales, K.G., etc., now Honorary Colonel 3rd (Militia) Bn. Gordon Highlanders, to be Colonel-in-Chief of the Regiment. Lieut.-General H. J. Buchanan, C.B., to be Colonel of the Norfolk Regiment; Lieut.-General R. T. Glynn, C.B., C.M.G., to be Colonel of the South Wales Borderers. Major-General A. H. Prinsep, C.B., Bengal Cavalry, to be Lieut.-General. Colonels F. Currie, Bengal Cavalry; A. W. Roberts, Bengal Cavalry; T. J. Quin, Bengal Infantry; E. W. Begbie, C.B., D.S.O., Madras Infantry; V. E. Law, Madras Infantry; F. Smalley, Madras Infantry; W. Salmond, C.B., R.E. (temp. Major-General), to be Major-Generals. Colonel the Earl of Erroll, A.D.C. to the Commander-in-Chief, to be A.A.G., of Cavalry at Head Quarters; Colonel I. C. J. Herbert, C.B., C.M.G., Grenadier Guards, to be A.A.G., Home District. Colonel J. T. Coke, D.A.G., Aldershot District, to command the troops in Mauritius with the rank of Major-General. Colonel H. H. Parr, C.B., to be a Major-General on the Staff to command the troops at Shorncliffe. Colonel the Hon. N. G. Lyttelton, C.B., Assistant Military Secretary at Head Quarters, and Colonel A. G. Wauchope, C.B., C.M.G., the Black Watch, to command Brigades in Egypt with the rank of Major-General.

In view of the advance of the Anglo-Egyptian Army in August, another Egyptian Brigade has been added to the Egyptian Army, the command of which has been given to Brevet Lieut.-Colonel J. Collinson, Northamptonshire Regiment. A second British Brigade has been added to the British force, which will be formed into a Division under command of Major-General W. F. Gatacre, C.B., D.S.O. Colonel A. G. Wauchope, C.B., C.M.G., 2nd Bn. the Black Watch, will command the First Brigade of this Division, and Colonel the Hon. N. G. Lyttelton, C.B., now Assistant Military Secretary at Head Quarters, will command the Second Brigade. The new British Brigade consists of the 1st Bn. Grenadier Guards, 1st Bn. Northumberland Fusiliers, 2nd Bn. Lancashire Fusiliers, and 2nd Bn. Rifle Brigade.

The presentation of colours to the new 3rd Bn. of the Coldstream Guards by Her Majesty the Queen, on the 7th inst., is a new departure in the custom of the Foot Guards. Although the colours of Line and Militia battalions are presented with ceremony on parade and receive the consecration of the Church, the custom in the Guards has been to issue them every few years like ordinary stores. It is hoped that the new departure will inaugurate a better order of things, and that the colours of Her Majesty's Household Troops will, in future, be treated with the same honour as those of the Line and Militia.

The Marquis of Lansdowne has announced the new scheme of the War Office for dealing with the Army Medical Staff. He admitted that there was no department of the public service which owed more to and depended more upon the members of the medical profession than the Army. With every year that passes engines of destruction are brought to a greater pitch of perfection. The skill and devotion of the medical service were, he said, the correctives of our modern ruthlessness. The Army is proud that it contains a number of officers who belong to the medical profession, but who are none the less soldiers in the fullest sense of the word, wearing the Queen's uniform, holding Her Majesty's commission, ready to take their share of the risk and hardship of warfare. Lord Lansdowne went on to say that it was his determination that there should be no failure either in theory or in practice to treat medical officers with the respect to which they were entitled. He counted upon this point, because he had observed with very keen regret that there had existed for some time past a certain estrangement between the Army and the profession. This want of confidence has had for its result that the Army has been unable to attract to the Service the number of candidates and the class of candidate which it was the desire of the authorities to see serving in the medical staff. Mistakes had been made on both sides, but the War Office has now determined that there should be no cause of complaint on its side. It was proposed to deal thoroughly with a question in regard to which not only the medical staff of the Army but the medical profession generally felt very strongly—the rank and status of the Army Medical Staff. It has sometimes been said, What does rank matter? The title of Doctor or Surgeon by itself may be regarded as a title which anyone would be proud to wear without further adjuncts. But in the Army, rank is the outward and visible sign of consideration and authority, and it is necessary in the military profession that a man should have a military stamp to distinguish him and to secure him his proper place among his comrades. It has now been decided to form out of the Army Medical Staff and the Medical Staff Corps a corps, the officers of which will bear the same military titles as other officers of the Army—always, of course, upon the clear understanding that those titles do not confer upon them the right to command outside it. These titles will be given up to the rank of colonel. It was urged that the authorities should not stop there, but go on to the rank of general officer. But there are conclusive reasons against this. The policy of the War Office is to restrict, as closely as it can, the number of officers bearing the title of General, and to insist that no one shall rise to that rank unless he is required to fill one of a limited number of appointments, all of which will involve general command in the Army and fitness on occasion to command troops in the field. No departmental officers will, under this system, be able to reach the rank of general officer, and it would be impossible to confer it upon members of the medical staff. Above the rank of colonel will be that of Surgeon-General, with the rank and precedence of a Major-General in the Army. Her Majesty has been pleased to approve of the formation of the "Royal Army Medical Corps," from the 1st July.

The general annual return of the Army for 1897 has been issued to Parliament. It shows that the total number of all ranks of the Regular Army on December 31st, 1897, was 221,487, as compared with 220,869 on December 31st, 1896, an increase of 618, against an authorised increase of 3,136 in accordance with the provisions of the War Office augmentation scheme. The total number of recruits brought to the colours in the course of the year is put down at 35,015, as compared with 28,532 in 1896. The large number of deaths, transfers to the Reserve, etc., reduced, however, the net increase to 162 men only. The losses during the year are accounted for thus:—Deaths, 2,067; discharges, 12,906; desertions, 3,669; and transfers to the Reserve, 16,702. The total strength of the 1st Class Army Reserve is given as 82,005, an increase of over 4,000 men on the figures of the previous year. Of the recruits who joined the

colours, 1,985 were for 12 years' service, 30,866 for seven years with the colours and five years with the Reserve, and 2,164 for three years with the colours and nine years with the reserve. They were thus distributed among arms of the Service:—Household Cavalry, 150; cavalry of the Line, 2,428; Royal Artillery, 6,357; Royal Engineers, 817; Foot Guards, 2,062; infantry of the Line, 21,037; colonial corps, 1,293; Army Service Corps, 522; Army Ordnance Corps, 96; Medical Staff Corps, 249; Army Pay Office Corps, 6.

The 82,005 Reserve men on the roll at the beginning of the year are accounted for by arms as follows:—Cavalry, 6,094; Royal Artillery, 10,918; Royal Engineers, 2,845; Foot Guards, 5,083; infantry of the Line, 52,991; Army Service Corps, 2,638; Medical Staff Corps, 969; Army Ordnance Corps, 200; Army Pay Corps, 18; Army Postal Corps, 111; and colonial corps, 138. The re-opening of the Supplemental Reserve (Section D) has resulted in filling the vacancies previously existing in the Reserve. Indeed, on January 1st of the present year the 1st Class Army Reserve was 2,000 in excess of the numbers provided by the Army Estimates. It has, therefore, been found necessary to check to some extent enlistments in Section D, and such enlistments are now restricted in the case of cavalry and infantrymen to such as are accustomed to horses and are willing to serve as officers' grooms or drivers. The establishment of the Militia on January 1st was 125,435, and the effective strength 105,531, leaving 19,904 wanting to complete. During the last five years there has been a gradual falling off in the total strength of the Militia, the numbers wanting to complete on January 1st, 1894, having been 13,173 only; but there has at the same time been a marked improvement under the head of "absent without leave from training," the absentees in 1893 having reached the number of 13,258, whereas last year the number fell to 7,916. The strength of the Militia Reserve on January 1st was 29,961, leaving only 39 men to complete.

The long-expected recognition of the military cyclist has at last come, for a permanent corps of cyclists is to become part of the establishment of the Army. This will be a surprise to those who can remember the early days of cycling, and how tardily it was taken up in the Army. The new corps is to consist of five companies, which will be trained after the manner of the present Mounted Infantry. The establishment of each company will be one captain, four subalterns, one colour-sergeant, four sergeants, four corporals, one bugler, and 120 privates.

Arrangements are being completed for the coming march of the 1st Bn. of the King's Own Scottish Borderers through the Scottish border counties after their participation in the manoeuvres. The battalion will go to Berwick by train on their return to Aldershot early in September. It is the intention of the War Office to send the headquarters of the battalion to Newry, and march a detachment of 12 officers and 300 men to Dumfries, where they will rejoin headquarters at Newry by rail and steamer. The places through which the battalion will march will probably be Duns, Coldstream, Kelso, Melrose, Galashiels, Jedburgh, Hawick, Langholm, Annan, Lockerbie, and Dumfries. The country to be passed through will be some of the most beautiful in Scotland, and there can be little doubt that great enthusiasm will be aroused by the march, as the majority of the inhabitants have rarely, if ever, seen a Regular battalion.

The Uganda Regiment, recently formed in India for service in East Africa, left Poona on the 9th May, consisting of six British officers, 10 native officers, 363 rank and file, and 52 followers. The men are dressed in khaki.

The June and July numbers of the *United Service Magazine* contain, amongst other matter, interesting articles on "The Russian Army," translated into English; "The Influence of Railways upon Fortress Warfare," by Lieutenant E. H. M. Leggett, R.E., Traffic Manager, Woolwich Arsenal; "The German

Staff Failure at Villersexel," by Colonel Lonsdale Hale, late R.E.; and "The Manoeuvres of the XIV. German Army Corps," by Colonel A. E. Turner, C.B., R.A. The magazine has lately changed hands, and the two latest numbers indicate a far more comprehensive policy on the part of the management. It will not in future limit itself to subjects of a strictly professional character, but will embrace all questions of national importance.

The Gold Medal of the United Service Institution of India, for the best essay on the "Creation and Maintenance of a Reserve of Officers for the Indian Army," has been awarded to Major H. Mullaly, R.E., a silver medal being also specially awarded to Captain C. H. Clay, 43rd Gurkhas.

Majors and captains of the Militia, Engineers, and Infantry, whether candidates for appointment as Instructor of Musketry or not, will be permitted, as well as subalterns, to attend a course of instruction at the School of Musketry, and, subject to the conditions laid down in paragraphs 331 and 474 to 478 of the Militia Regulations, they will be allowed their travelling expenses, and the regimental pay of their rank for the period they are under instruction.

The headquarters of the Home District, which have been for many years at the Horse Guards, Whitehall, were moved on the 1st July to 23, Carlton House Terrace, S.W.

A trial of a new field gun took place last month at Messrs. Vickers, Sons, and Maxim's gun range at Eynsford. The programme was principally intended to illustrate the advantage of the application of a field mounting to either a high or low powered field gun, mountain gun, or heavier siege-train gun or field howitzer, whereby a great rate of fire can be obtained, if required, without altering the alignment of the sights, and yet admitting of variations of laying between an arc of from 6° to 8° without movement of the trail, as well as of bringing the gun after each round to its original position, thus saving the loss of time and manual labour of the gun detachment, due to the necessity of running up after firing. In view of the introduction of Q.F. field guns by the great military Powers of Europe, notably Germany and France, as well as to the competitive trials being carried out in most other countries, special interest attaches to this trial, as it is probable that Q.F. field guns will be introduced by all the Powers of Europe. The gun used was representative of a type making use of the metallic case system of obturation, which at present is mostly being used on the Continent. The mounting, however, is equally suited to a gun of the De Bange obturator type, by which a small reduction in the general weight of the equipment is obtained. The mounting—which, for the purpose of this trial, was an important feature under consideration—is constructed of a special nickel steel, giving high resisting qualities within the limits of permissible weight, so that the gun can be fired on rough and disadvantageous ground without risk of injury. It is said that a similar design of mounting has traversed over many hundreds of miles of the worst Spanish roads, and has also stood a jolting trial of upwards of 40 miles of rough boulders without injury. The gun is mounted on trunnions formed on a top carriage, the latter being capable of being laterally trained within a few degrees without movement of the trail. The elevation is performed by simple gearing, the lever being arranged in a convenient position relative to the training handle, so that the pointing can be rapidly and accurately performed whilst the gun is being loaded.

The recoil and subsequent return of the gun to the firing position are operated by a specially constructed device fixed under the protection of the trail, which is arranged to allow both the gun and mounting to recoil, thereby making use of the whole available mass for overcoming the energy of recoil, the result being that the jump is eliminated and the gun run out into the firing position without alteration of the sight alignment. One of the special points by which the system is

characterised is that it readily admits of its application to existing artillery without any serious modification to the existing type of mounting, and the mounting when altered is, within a few points of percentage, equal in efficiency to an entirely new quick-firing field equipment. The total weight of the gun and mounting complete, including mechanism, wheels, quick-firing attachment, tools, etc., is 19 cwt. The weight of the limber is not here recorded, as this depends on the weight of the ammunition intended to be carried by any particular equipment.

Twenty-seven rounds were fired in all, with charges of $16\frac{1}{2}$ ozs. of ballistite, the weight of the shell being $13\frac{1}{2}$ lbs., and a velocity of 1,650 foot-seconds was obtained for a pressure of 14 tons. Two rounds were first fired to exemplify generally the working of the system, after which 15 rounds were fired for rapidity, each round being carefully laid on the target. These 15 rounds were fired in 67 secs., which gives a rate of fire of $13\frac{1}{2}$ rounds per minute. A second series was then fired, during which the gun was very carefully laid and was placed pointing deliberately 40° off the target, and the time was taken from the gun's crew working the gun from this position into the alignment, and proceeding with the firing in such a manner as would take place when a gun was being taken into action on service, the time being taken from unlimbering. Under these circumstances 10 rounds were fired in 125 secs., or at the rate of five rounds per minute, each of the rounds being carefully laid on the bull's-eye. Six rounds were then fired from a mountain equipment at the 1,000 yards range, when excessively good shooting was obtained, but the shooting under these circumstances is not now specially reported, as the equipment was one of which the results are well known, and which is being successfully used in Egypt, this type of gun having made excellent shooting recently at the battle of the Atbara. The Egyptian Government are now in possession of six complete batteries of these guns, which use shells of $12\frac{1}{2}$ lbs., and 20 lbs. double common shell when desired.

A Parliamentary paper has been issued giving the Postmaster-General's regulations as to the employment of Reserve and Discharged Soldiers as postmen. In August last the secretary wrote to the heads of departments and surveyors of the Post Office stating that it had recently been decided that one-half of the vacancies in situations for postmen, assistant postmen, porters, labourers, and other analogous situations are to be given in future to persons who have served in Her Majesty's military and naval Services, or who are recommended for the purpose by the authorities of the War Office or of the Admiralty. This decision, however, will be partially in abeyance until the telegraph messengers actually in the service who have already attained the age of sixteen years have been provided for. The letter proceeds:—"In future, whenever a vacancy occurs in any town or place in your district in any situation of the character referred to, you will inquire whether there is any telegraph messenger who on September 1st, 1897, had completed the age of sixteen years and who has since reached eighteen, and is otherwise qualified for, and can be recommended for, the appointment. If any such messenger is available he should be recommended for the appointment. If no such messenger is available the first vacancy occurring in such town should be given to a soldier or sailor, application in the case of a soldier being made in the usual way to the military authorities; while the next vacancy in such town should be reserved either for a telegraph messenger who had not attained the age of sixteen years on September 1st, 1897, but who has since attained the age of eighteen years, or to an auxiliary postman or other person having a claim on the department. Subsequent vacancies should be given in the same way alternately to ex-soldiers or sailors and to telegraph messengers."

CANADA.—The report of the department of Militia and Defence contains a report from the Deputy Minister, the Chief Superintendent of Stores, the Chief Engineer, the Superintendent of the Cartridge Factory, the General Officer Com-

manding, the Commandant of the Royal Military College, and a report from Colonel the Hon. M. Aylmer, A.G., on the Jubilee Contingent.

The Chief Superintendent of Stores (Lieut.-Colonel Macdonald) in his report says that many articles are of an obsolete nature, and recommends their disposal by sale.

Magazine accommodation is needed at London and Toronto, and there are no magazines for gunpowder, and but very limited accommodation for storage of small-arm ammunition west of Kingston.

In regard to the sluggish issues of clothing, the Chief Superintendent says:—In order to carry out issues of clothing on requisitions in a satisfactory manner, a much larger supply for stock is a necessity. There is no reserve to fall back upon when sizes are short in the year's supply. The inability of the store branch to meet requisitions according to size roll, has been the cause of much complaint—this cannot be remedied under existing circumstances. The Deputy Minister endorses this recommendation, and urges an increased vote for clothing. There were 1,829,719 rounds of S. A. cartridges issued during the year. Of this number, 1,055,693 rounds were a free issue, and 774,026 were issued on repayment. Six thousand Lee-Enfield rifles have been issued to corps. The Snider ammunition in store has been reduced to 3,600,000 rounds. The total amount of rents received for military properties during the year was 4,979·26 dollars for clothing, 6,505·49 dollars for ammunition, 11,665·90 dollars miscellaneous, making a total of 23,150·65 dollars.

The report of Captain Gaudet, R.C.A., superintendent of the cartridge factory, shows that 1,672,000 rounds of .303 ball cordite, mark II., solid case, small-arm ammunition were manufactured. Twenty-five dollars per thousand is charged for this ammunition, while the retail price in England is thirty-five dollars per thousand. The superintendent suggests certain changes in the plant with a view of reducing the cost of manufacture. The factory is designed to turn out 6,000,000 rounds per annum, whereas the out-put is only 1,500,000 rounds per annum. The shell factory turned out 3,310 9-pounder R.M.L. common shells, 6,368 Shrapnel shells, and 950 40-pounder tin obturating caps. The manufacture of 12-pounder shells for field artillery is recommended.

A small company of the Royal Canadian Artillery, Quebec, consisting of three officers and sixty-five non-commissioned officers and men, are to exchange with a like number of the Royal Artillery at Halifax. There is no doubt but that the Royal Canadian Artillery will derive great benefit at Halifax in drilling with modern guns in sea-coast batteries. They should also derive benefit from the use of the latest range-finders and the laying of mines, etc., which are necessary for the proper education of the modern artillerist. The Royal Artillerymen at Quebec will derive some amusement, if not benefit, from the old, obsolete guns that still do duty on the Citadel. What the Royal Canadian Artillery require are modern guns; given these, they should be as efficient as the Royal Artillery.

The question of interchange of Imperial with Colonial troops is no doubt a sentimental one. But the insuperable difficulty appears to be in the matter of pay; that is, the rate of pay. The Imperial troops receive a shilling a day, while the Royal Canadian Artillery receive 40c. with full rations. The men of the Royal Artillery can hardly be expected to be contented at receiving a lower rate of pay than the Canadians quartered in the same barracks. It would produce dissatisfaction and jealousy. Let us suppose "A" Field Battery, R.C.A., be sent from Canada to England. Canada would maintain them, and they would receive the Canadian rate of pay with full rations. Suppose a field battery of the Royal Artillery be sent from England to Canada. England would pay them the Imperial rate of a shilling a day. Would not the Canadian artillerymen in England, at 40c. a day, cause discontent, dissatisfaction and jealousy among the Royal Artillery?

men? The Canadians would not be willing to accept the Imperial rate of pay in England so as to let the Imperial troops enjoy the Canadian rate in Canada.

Sentimentally and theoretically the idea is excellent, but it is wholly unrealisable.

Major-General W. J. Gascoigne has resigned his appointment as Major-General in command of the Militia. An Order in Council has been passed cancelling Militia General Order 1, January, 1898, dispensing with the services of Lieut.-Colonel Strathy, Royal Scots, of Canada, and removing his name from the list of Militia officers, and substituting therefor an Order transferring him to the reserve of officers, with the rank of Lieut.-Colonel. Thus, the last scene in a farce, which has been played before the Canadian public for the last eighteen months, comes to an end. The resignation of Major-General Gascoigne, on the reinstatement in the Militia of Lieut.-Colonel Strathy, was inevitable.

Major-General Gascoigne has held the appointment of General Officer in Command of the Militia since September 19th, 1895, and during that time has had an unfortunate experience in trying to deal in a true soldierly spirit with matters of discipline connected with the Militia. The decisions he has given in these matters have been partly carried out, but, almost without exception, they have been subsequently reversed, making his position as General Officer in Command of the Militia absolutely untenable. But the reinstatement of Lieut.-Colonel Strathy, after the wordy and ill-judged interviews that appeared in the Press, appears to have been the "last straw" that caused the resignation.—*Canadian Military Gazette*.

AUSTRIA-HUNGARY.—The evening hot meal of preserved provisions which, since the 1st January, 1897, has been served out to the troops twice a week, is to be available every day from the beginning of next year. Five kreuzers extra will be paid to each man weekly towards the cost of this meal, but it is said that this additional money will not meet more than about a third of the price demanded. It is perhaps enough to buy a little bad butter or a small bit of questionable sausage, but so far as pay is concerned it leaves the substantial supper of approved preserved provisions out of the soldier's reach. The change is nevertheless welcomed as a step in the right direction.

The war estimates for 1899 amount to 132,468,237 florins, which is 4,273,444 higher than the amount for the present year. There is, in addition, an extraordinary or supplementary budget of 11,217,014 florins, amounting to 763,393 florins less than that of the present year. A large part of the ordinary expenditure is required for carrying out arrangements which were commenced in previous years; for instance, there will be nine additional subalterns in the cavalry, four being appointed on the 1st May, and five on the 1st November, 1899. This will complete the addition of eighty-four subalterns to the cavalry, as resolved in 1894. Similarly, ten new subalterns will be appointed to the train, half on the 1st May, and half on the 1st November, making up the eighty-five subalterns by which, in 1894, it was decided to increase the train. In the field batteries 288 horses will be required for under-officers, as an instalment of the 1,424 horses by which it was decided to increase the field batteries. At the end of next year there will still be 580 horses wanted to complete the above total. During next year also ten of the captains supernumerary to the peace establishment of the field and fortress artillery will become mounted officers, and likewise eleven captains of the engineer staff. Improvements are to be made in the intendance, in the case of officers' orphans, and in the feeding of the soldiers.—*Militär-Zeitung*.

FRANCE.—It has been remarked in the military Press that there are very few cavalry officers in the higher grades of general's rank, or on the general staff. It is said that the cavalry is poorly represented in the competitions for entrance

into the Superior School of War, and that the fault lies with the inspectors-general, who attach too much importance to the equitation learned at Saumur. The lieutenants who pass out thence, highest on the list, are immediately promoted to captain, but those who pass through the Superior School of War are not similarly favoured. The result of this policy is that the proper proportion of cavalry officers is not maintained among the army corps commanders. It should also be said that cavalry generals do not apply for the command of infantry divisions and brigades, as artillery generals do. The consequence is apparent in the fact that there are four artillery members in the supreme council of war, but no cavalry members whatever.—*Militär-Zeitung*.

In the present year 330,000 recruits, together with 70,000 from last year, appeared before the council of revision, but of this vast number only 243,000 were accepted, or a proportion of 70 per cent. Among the rejected, 31,000 were evidently unfit, and 70 were too weak or too small; 25,000 who were unsuited for duty at the front were noted for subsidiary work, clerkships, etc. There were 17,000 one-year volunteers, 6,000 colonial troops, and 8,000 for the Navy, besides 100 whose past history disqualified them for Army service. But the 70 per cent. obtained is a very good proportion, and is higher than can be shown by any other country. Germany rejects 40,000 every year for weakness, 45,000 evade service, and 1,300 are unworthy of it; Austria is in a worse position; and in Italy 65,000 of the recruits are unfit, and 13,000 evade service. France has improved of late years in these respects, and at present it is calculated that, with her Regular Army, Territorial Army, and all the contingents of their reserves, she could place 3,660,000 men in the field.—*Vedette*.

GERMANY.—The Emperor has ordered that the inspector-general of cavalry shall in future be directly under the command of His Majesty, and that inspectors of cavalry, the riding establishment, and the veterinary department, with their respective institutions, are to be under the inspector-general. So far, however, as administration is concerned, the riding establishment and the veterinary department continue to be under the War Ministry. The duty of the inspector-general is to report to the Emperor on cavalry questions, and on anything special connected with the training of the cavalry; to superintend cavalry operations ordered by the Emperor, or to take command of several divisions if necessary; to conduct the tactical journeys of cavalry generals and staff officers; to inspect details, in various departments of service, connected with the horses, the remount depôts, and technical matters. He is also president of the cavalry commission.—*Militär-Zeitung*.

It is stated that since the year 1880 there has been a great increase in the importation of foreign horses into Germany. In 1880 the Germans imported 59,626 horses, and exported 17,966, but in 1896 the imports had risen to 102,391, while the exports had decreased to 9,894. Russia supplied 31,862 of the imports in 1896; Belgium came next with 21,453; Denmark, 15,876; Austria-Hungary, 11,633; Holland, 7,703; France, 6,891; America, 4,285; England, 2,688. In France, also, the number of horses imported far exceeds that of the exported; for instance, in 1880, the French imported 25,714, and exported 9,626. In 1889, however, the imports were only 17,157, while the exports were 35,862.

With reference to a ride from Berlin to Königsberg and back, which was some time ago performed by a cyclist detachment of the Guards, the bad effects of excessive cycling have been pointed out by a German military paper. It is said that the recruiting authorities remark on the frequent unfitness of professional cyclists for military service. Young men who are extremely devoted to this exercise are largely developed in the leg muscles, but, on the other hand, they often stoop, and their chest measurement is insufficient. This pronouncement of the authorities cannot be wondered at when enthusiastic cyclists are seen

spinning along at their top speed, and bent double over their machines. In any case, the matter is serious enough to attract the attention both of doctors and "sportsmen." Remarks of the same kind have been made in France.—*Revue du Cercle Militaire.*

Experiments in weight-carrying and marching were lately made in Germany. Among those engaged were students of the Emperor William Academy in Berlin, for the education of Army doctors; also soldiers of Guards regiments, and other men belonging both to the Active Army and the Reserve. The trials were generally carried out by squads of eight men, and the loads were classified as moderate, medium, and heavy. The highest limit of the first was 22 kilogrammes; of the second, 27; and of the third, 31. The work was done not only in normal weather, but also in heat, rain, and snow; and the distances covered varied from 26 to 28 kilometres. It was found from the experiments that men not specially strong could carry the moderate pack for 28 kilometres very well in normal weather, and that their powers increased on the succeeding days of the march. The loads could be carried just as well in rain, wind, and snow, but not so well in hot, and particularly in close, weather. The same results were apparent under the medium weight, except that close weather was more injurious, and its effects were not so quickly overcome. With regard to the heavy weight, whether borne in cool summer weather or in the cold of winter, by weak men or strong, it was found to have a disturbing influence on the functions of the body. Practice and training made the "moderate" pack, and even the "medium," tolerably easy to carry, but no amount of training neutralised the bad effects of the "heavy" load.—*Vedette.*

ITALY.—It has been decided that in each regiment of Bersaglieri there is to be a thirteenth company, composed of cyclists. What their arms and equipment are to be has not yet been announced.—*Deutsche Heeres-Zeitung.*

The Italian Government has decided to enrol as soldiers all the employees of the railways. A commission composed of officers of the Army, officials of the Ministry of Public Works, and representatives of the railway companies, presided over by a former Under-Secretary of State for Public Works, has been appointed to deliberate on the questions involved. The prompt working of the lines in case of war, and even in case of internal disturbance, is absolutely necessary. Moreover, a strike of the railway men would mean the ruin of the country. The new scheme is well received by the Press; it does not necessitate service in the ranks in all cases, but it provides that men of whatever age or position, if employed by a railway company, are under military authority.—*Revue du Cercle Militaire.*

RUSSIA.—In the year 1897, 151 officers presented themselves for the qualifying examination of the Nicholas Engineer Academy, and of these 131 were admitted to the next test. The principal examination was undergone by eighty-five officers, of whom three competed at once for the senior class. The result was that sixty-three passed, including three for the senior class; but, owing to the limited accommodation of the school, only nine officers were received. By order of the War Minister, thirty in excess of the establishment were admitted to the junior class, but still twenty-four are entirely left out although they have passed the examinations.

The Siberian Railway is a gigantic undertaking which cannot be properly appreciated without taking into account the character of the countries through which it passes. Siberia is an enormous territory, of 12,000,000 square kilometres, but sparsely peopled, the inhabitants numbering scarcely four and a half millions. Although the climate is bad, changing from intense cold in winter to burning heat in summer, the people are inured to such great changes of tempera-

ture, and even the prisoners soon become accustomed to them. The necessaries of life are very dear, but the country contains gold, platinum, lead, copper, and iron; diamonds, emeralds, and other precious stones are found; the wheat and rye harvests are abundant, and the only real disadvantage is that in the whole land there is not one entirely ice-free harbour. And yet the trade of Vladivostok is considerable. In the year 1894 it was entered by 102 steamers and nine sailing-ships, while in the same year the exports amounted to four million roubles, and the imports to thirteen and a half million roubles.

The whole length of the line is 7,600 kilometres, and its estimated cost three hundred and fifty million roubles. The calculated limit of expense is, however, likely to be exceeded, owing to the great haste with which the construction has been pushed on, notwithstanding that compulsory labour was in a large measure employed, as well as the extremely cheap services of Koreans and Chinese. The line was begun at several places simultaneously. It is divided into three grand lengths—the first, Tscheljabinsk-Kolywan, being 1,500 kilometres in length, and the second, which has been partly taken over for traffic, being 2,000 kilometres. At Kolywan there is a bridge on the line, with a span of 768 metres, similar to one at Buda-Pest, but the latter has a span of only 390 metres. The bridge at Omsk measures 860 metres, and rests on seven strong piers, which rise 18 metres above the highest water-level, and have foundations 15 metres deep. The third and most easterly length is the farthest from completion, and it will take till 1904 to finish the whole.

The greatest difficulties encountered were in the western length, where upwards of 150,000 kilogrammes of dynamite were used for blasting. It is intended to despatch a train daily from each end, and the journey will be timed to occupy eight days and six hours. Coal must be provided for the locomotives, as wood is too scarce in Siberia to be used for that purpose. This railway will certainly produce a very great effect not only on Siberia itself, where post stations and other signs of trade have already increased, but also on European Russia, Germany, and other parts. Passengers can be carried from Moscow to Vladivostok for 125 roubles, in about ten days, whereas by Brindisi and Shanghai the journey takes thirty-six days. The railway has, however, little or no strategic value, as it is only a single line, and no large bodies of troops could be transported on it with the necessary speed. Its great advantages are commercial, and it will have a most important influence in promoting civilisation.—*Militär-Zeitung*.

According to an Imperial Order, published in June, there will, in the event of war, be as many reserve artillery brigades placed on a war footing as there are reserve infantry divisions in European Russja and the Caucasus. The divisions of the first line receive seventeen brigades of six batteries and one brigade of four batteries; the divisions of the second line one brigade of six batteries, and twelve brigades of four batteries. There will also be four mountain batteries for the two Caucasian divisions of the second line. There will be three ersatz foot artillery brigades of twelve light batteries and one mortar detachment, forming nineteen detached batteries. Of the above-mentioned 164 reserve batteries intended for war, forty field and one mountain batteries will be maintained in time of peace. In order to complete the formation of fifty-five ersatz batteries in war, three ersatz brigades and five detached batteries are maintained in time of peace. For the horse artillery there is one ersatz horse artillery battery.—*Reichswehr*.

This year's summer drills in Russia commenced in the middle of April. The troops then called out were those of Trans-Caspia, of Odessa, and partly of Wilna, the cavalry of Warsaw and Kieff, and the cavalry and artillery of Moscow. The drills last, altogether, four months, and are divided into three parts. The first of these includes the private drill and practice of individual bodies of troops; the second is devoted to special drills; and the third to combined operations of all arms.

Under the first head, the troops go into camp on the 1st May, for field-firing, and the artillery generally practise in the neighbourhood of their own garrisons. The special drills usually take place in May and June, and last for six or eight weeks. The artillery then practise at the district gunnery schools, of which there are four in Kieff, two in Warsaw and the Caucasus, and one in most of the other districts. The largest concentration is at Rembertoff, where there are seventy-six batteries.

The special cavalry concentrations are at St. Petersburg, Wilna, Warsaw, Kieff, Odessa, and Moscow. In the Caucasus only a few sotnias are concentrated, while in Finland and other provinces there is no concentration. Eighty-five per cent. of the cavalry take part on these occasions. The largest muster is at Skiernewice, where there are seventy-one squadrons and sotnias.

The drills of all arms are to take place in August, except in Trans-Caspia, Turkestan, and part of the Caucasus, where, owing to the great heat, they are postponed to the middle of September. They are held at many different points and are attended by 85 per cent. of the whole infantry, 86 per cent. of the cavalry, and 94 per cent. of the artillery.

There will also be grand manoeuvres in the second half of August in the St. Petersburg, Warsaw, Odessa, and other military districts. At Warsaw, for instance, the manoeuvres will continue for seven days, the troops engaged amounting to $72\frac{1}{2}$ battalions, 100 squadrons and sotnias, and 33 batteries. Mounted sotnias are to be organised from the frontier guards in Wilna, Warsaw, and Kieff.—*Vedette*.

The augmented Imperial troops in East Asia are two East Siberian line brigades and two single line battalions, making eleven battalions; two East Siberian rifle brigades, which until this year had five battalions each, but now are each composed of five two-battalion regiments, or, in all, twenty battalions; two reserve cadre battalions, bringing up the whole to forty-one battalions in war, in addition to three Trans-Baikal Cossack battalions. Russia would thus have, in those regions, from 30,000 to 40,000 infantry in case of war. Of cavalry there are three Trans-Baikal Cossack regiments, which are to form from six to nine in case of war. These and other regiments would supply from fifty-four to seventy-two sotnias. The artillery would amount to about twenty batteries with 144 guns, in addition to which must be counted the fortress artillery and the engineers.—*Militär-Wochenblatt*.

My narrative of "Two Months in Russia" would be incomplete if I did not add some general observations and personal impressions. The officers are vigorous, instructed, and active. Their relations with one another when off duty are most intimate, even familiar, and there is hardly any observable distinction of rank. They generally have but small means, and their life, especially in the cavalry when stationed in poor villages, is very dreary. There is no fixed rule for promotion, nor does it always carry advanced duties with it, as in France. In the Russian Army, the rank of Major does not exist, Captains being promoted at once to Lieutenant-Colonel.

The Russian soldier is strong, well formed, and rather heavy in appearance, but very nimble nevertheless. He is devoted to his officers, by whom I have never seen him brutally treated. He is sober, and content with one meal a day, of which oatmeal forms a large part; for the rest he takes tea. The field cooking is done in the large saucepans which are carried after the troops; their utensils are not like ours. The infantryman marches well, although General Dragomiroff told me that his discipline on the march left something to be desired. Both cavalry and infantry wear boots; they neither understand nor appreciate our shoes, which are unfitted for their muddy roads. The under-officer plays a very minor part, living with, and almost as, the men, and possessing neither the rank nor the instruction, nor the influence of ours.

In the infantry, the captain is rather unimportant. He is not mounted in time of peace, and the colonel keeps the instruction in his own hands. At drill, the chief of the battalion gives the word of command, and is, in fact, the mainspring of the regiment. The formations are much more in masses than ours, and those for battle are imperfect. It seems that the enormous losses of Plevna have not carried home their lesson.

The same fault may be found with the cavalry as with the infantry; its formations are too solid and unwieldy. There is a misuse of regimental columns of squadrons which, besides being most vulnerable, are less mobile, and take longer to deploy than our corresponding formation. There is likewise a misuse of the words of command and the trumpet sounds. In a word, the Russian cavalry, in the matter of evolutions, remains where we were before 1873.

The horse artillery of the cavalry division does not form a group; the two batteries are independent. They are generally separated, and in the formations preparatory to battle they are placed in rear of the second and even of the third line, and always arrive too late. The horses of the dragoons are heavy and show little breeding, and although they are said to have strong constitutions and to be good trotters, their gallop and charge are slow; but they are quiet, docile, and free. The Cossack horses do not stand high, but they are temperate and strong. The men are active and dexterous. The Cossacks are excellent horsemen, very skilful, and remarkably good on reconnaissance duty.

Officers say that the artillery is tolerable. They use two projectiles and two fuses. It appears to me that the laying is slow, and that the group firing is badly organised. The artillery horses are strong, the conductors are capable, and the horse batteries are remarkably mobile. Notwithstanding these few criticisms, I have formed an extremely good impression of the Russian Army, because it possesses in a high degree the essential qualities of a good army—discipline, sobriety, tenacity, and courage.—*Correspondent, Revue du Cercle Militaire.*

SWITZERLAND.—Four mitrailleuse companies have been created in the Swiss Army, the men being treated as cavalry in the matters of recruitment, arms, pay, horses, and length of service. The combined strength of the four companies, including sixteen officers, is 288, with 388 horses, 32 mitrailleuses, and 24 carriages. Each mitrailleuse will be supplied with 10,000 cartridges, 64,000 being carried in the four company carts, and 16,000 on eight pack horses. The eight mitrailleuses will likewise be carried on eight pack horses. These companies are divided into half companies of four guns, the experience of fortress troops having shown that to obtain an effective and uninterrupted fire with this arm, it is necessary to have a group of four. The fire of a half company of four such guns is equal to that of a company of infantry. Each mitrailleuse company, therefore, that is attached to a brigade of cavalry, gives as much assistance as two companies of infantry, and is always at hand when wanted. The originality of this arrangement consists in the comparative independence of the mitrailleuse company. It is not a mere accessory of the squadron but a special arm analogous to horse artillery. It may be detached from the cavalry and employed with artillery, or on services demanding mobility and surprise. Except in England, this use of the mitrailleuse has not been tried, but it meets a real want in Swiss national defence, which is a sufficient reason for its introduction. The material required for the four companies is to cost 400,000 francs, but a reserve of eight mitrailleuses for instructional purposes is included in this estimate. Experiments carried out in March proved that the Maxim was the best weapon, and it has therefore been decided to adopt it for the four new companies.—*Revue Militaire Suisse.*

NAVAL AND MILITARY CALENDAR.

JUNE, 1898.

1st (W.) Bill passed in Holland introducing compulsory military service.
2nd (Th.) H.M.S. "Marathon" commissioned at Portsmouth to relieve
"Cossack."
3rd (F.) Dervish force at Shabluka withdrawn to a position nearer Khartoum.
4th (Sat.) Launch of second-class cruiser "Hermes" from the Fairfield Ship-
building Yard at Govan on the Clyde.
6th (M.) Completion of the evacuation of Thessaly by the Turks.
7th (T.) H.M.S. "Edgar" arrived at Plymouth from China.
8th (W.) H.M.S. "Crescent" commissioned at Portsmouth.
9th (Th.) Reserve Forces Bill read a third time in the House of Lords.
10th (F.) Presentation of new colours to the 3rd Bn, West Yorkshire Regiment
at York, by the Lady Mayoress of York.
" " Six hundred American marines landed at Guantanamo, in Cuba.
" " H.M.S. "Sirius" paid off at Devonport.
" " Bompeh, rebel native stronghold in British West Africa, captured.
14th (T.) The Niger convention between Great Britain and France, and the
Protocol approving the convention, signed at the Quai d'Orsay.
" " H.M.S. "Blenheim" paid off at Chatham.
15th (W.) Unsuccessful attack by the Americans on the Spanish at Guantanamo,
Cuba.
18th (Sat.) Launch of the battle-ship "Marechal Deodoro" from La Seyne
Yard at Toulon, for the Brazilian Government.
20th (M.) H.M.S. "Blonde" arrived at Plymouth from the West Coast.
21st (T.) H.M.S. "Marathon" left Portsmouth for East Indies.
" " Launch of H.M. first-class battle-ship "Albion" from the Thames
Iron Works.
22nd (W.) United States troops, under Major-General Shafter, landed near
Santiago.
" " H.M.S. "Rainbow" arrived at Plymouth from China.
23rd (Th.) Advance of United States Army on Santiago.
25th (Sat.) H.M.S. "Illustrious" left for the Mediterranean.
" " H.M.S. "Edgar" paid off at Devonport.
30th (Th.) H.M.S. "Devastation" and "Charybdis" paid off at Devonport.

Addenda to Naval and Military Calendar for May.

7th (Sat.) Launch of third-class cruiser "São-Gabriel," of 1,800 tons, 2,650-
I.H.P., from the yard of the Société des Forges et Chantiers de
la Méditerranée at Havre for the Portuguese Government.
26th (Th.) Launch of torpedo-cruiser "Tamayo," of 1,000 tons, 6,000-I.H.P.,
from the Germania Yard at Kiel for the Brazilian Government.

FOREIGN PERIODICALS.

NAVAL.

ARGENTINE REPUBLIC.—*Boletin del Centro Naval*. Buenos Aires: April, 1898.—Has not yet been received.

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens*. No. 7. Pola and Vienna: July, 1898. — "The Spanish-American War, with particular regard to the Naval Operations." "The English Naval Manœuvres, 1897." "The German Naval Estimates for 1898." "The English River Gun-boat 'Heron.'" "Foreign Naval Notes." "Book Notices."

BRAZIL.—*Revista Maritima Brazileira*. Rio de Janeiro: May, 1898.—"The Penetration of Projectiles" (continued). "Spain and the United States." "Privateering and Maritime International Law." "The Spanish Torpedo-boat Flotilla." "The Evolution of Navies during the last ten years" (continued). "Foreign Naval Notes."

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Le Moniteur de la Flotte. Paris: 4th June, 1898.—"Bonifacio." "The Mishap to the 'Hoche.'" "The Large Fleets." "The Spanish-American War." 11th June.—"The Lessons of the Spanish-American War." "The Spanish-American War." "Naval Construction in the last Five Years." "The Amnesty Law." "The Court-Martial on the Loss of the 'Ariel.'" 18th June.—"Why not the Mémoires of Seamen?" "The New Construction in 1898." "The Spanish-American War." "Mobilisation Experiment at Toulon." 25th June.—"The Programme for Admission to the Bordo." "The Spanish-American War."

GERMANY.—*Marine Rundschau*. Berlin: June, 1898.—"Strong Lights upon the Mediterranean" (continued). "Remarks upon Modern Nautical Astronomical Tables." "The Fitting-out and Employment of the Blockade-boats of the German Squadron on the East Coast of Africa, 1888-89, and life on board them." "The German North Pole Expedition." "Military Sea Transport." "On the Means for Condensing Sea Water." "German Armour-plates and German Armour-piercing Guns." "The Spanish-American War."

ITALY.—*Rivista Marittima*. Rome: June, 1898.—“The Late Minister Brin (memorial notice).” “Long-Range Fighting between Two Ships (a study on their absolute movements).” “Farragut and Nelson according to Mahan.” “Stockless Anchors” (illustrated). “A Letter from M. A. Colonna to the Doge of Venice after the Battle of Lepanto.” “Signal Stations, their Importance in the Service of Exploration (scouting).” “The Spanish-American Conflict” (separate supplement). “On a Method of Changing Bearings between the Units of a Naval Force.” “Naval Notes.” “Notices of Books, etc.” Plates—French battle-ship “Bouvet” and cruiser “Cassard.” United States battle-ship “Oregon.” “Bazin” roller-ship. Yacht “Terni.” The Port of Santiago (in the supplement).

PORUGAL.—*Revista Portuguesa, Colonial e Maritima*. Lisbon: June, 1898.—Has not been received.

SPAIN.—*Revista General de Marina*. Madrid: June, 1898.—“The Japanese Navy” (concluded). “How the English Fleet was Illuminated at Spithead.” “Account of some Experiments on the Transmission of Heat by the Blechynden System.” “The Maxim Aerial Torpedo.” “Trials of the English Cruiser ‘Diadem’” (concluded). “New Formulas of Nautical Astronomy.” “Injuries to Machinery at Sea and the Method of Repairing them” (continued). “Geographical-Social-Medical Study of the Island of Balabac” (continued). “Naval Bases.”

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AUSTRIA-HUNGARY.—*Militär-Zeitung*. Vienna: 6th June, 1898.—“War Minister's Speech to the Delegates.” “Comments on the Cuban War.” 14th June.—“Army and Parliament.” “Comments on the War.” 22nd June.—“A Beneficent Institution.” “What now?” (about Officers' Pay). “The Spanish-American War.” 30th June.—“Reform in Military Educational Matters.” “History of the 6th Hussars.” “Comments on the Spanish-American War.”

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Mittheilungen über Gegenstände des Artillerie- und Genie-Wesens. Vienna: June, 1898.—“The Energy of Projectiles fired with Great Initial Velocity.” “Girdle Fortresses.”

FRANCE.—*Revue du Cercle Militaire*. Paris: 4th June, 1898.—“The Place of Artillery in Columns.” “Alpine Formations in Austria-Hungary.” “The Germans in East Asia.” 11th June.—“Study of a March and Combat.” “Officers on Leave in the Italian Army.” 18th June.—“Study of a March and Combat” (continued). “The Prussian Army List for 1898.” “The 39th Regiments of Russian and French Infantry.” 25th June.—“Study of a March and Combat” (concluded).

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Le Spectateur Militaire. Paris: June, 1898.—“Our Rifle” (concluded). “Letters of General Cavaignac on Algeria” (continued). “The Influence of War on the Life of Peoples and States” (concluded). “Guerilla Warfare and the Commissariat Service” (continued). “Captain La Tour d'Auvergne, First Grenadier of the Republic.” “The Spanish-American War” (continued).

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Revue du Génie Militaire. Paris: June, 1898.—“On the Means of Securing the Permanent Action of the Siphon.” “A New Mode of Using Mortar in Constructing the Walls of Large Reservoirs” (concluded). “An Apparatus for the Reduction of Water-pressure.” “Vauban-Analysis and Extracts” (continued).

GERMANY.—*Militär-Wochenblatt.* Berlin: 1st June, 1898.—“Survey of the Events in Epirus in April and May, 1897” (continued). “British Army and Navy Estimates for 1898-99.” 4th June.—“Prince Adalbert of Prussia.” “Survey of the Events in Epirus in April and May, 1897” (concluded). “Education in Judging Distance.” 11th June.—“Education in Judging Distance” (concluded). “The French Manœuvres of 1897.” “A Drill with Horsed Heavy Batteries in France.” “Military Measures for Suppressing the Disturbances in Italy.” “Military News from North America.” 15th June.—“The Emperor and the Army.” “The Royal Fencibles of Berlin.” Artificial Rations for Army Horses.” 18th June.—“On the Conditions of Infantry School-Shooting and their Advantages.” 22nd June.—“Test-shooting in its Effect on the Warlike Training of the Infantry.” “The Strength of Russia in East Asia.” “The Increase in the British Army.” 25th June.—“The Battle of the Atbara.” “On the Coming Improvement in the Pay of Russian Officers.” 29th June.—“The Infantry Regiment Emperor William, King of Prussia, No. 120.” “Theodore von Bernhardi at the Italian Headquarters in 1866.”

Jahrbücher für die Deutsche Armee und Marine. Berlin: June, 1898.—“The Siege and Capture of Longwy in January, 1871.” “Cavalry Divisions and the Strategic Front.” “The Institution of Field-firing in the Field Artillery.” “In the Infantry of Map-making.” “A New Russian Military Harbour.” “A Portable Electric Field Railway.” “The New Organisation of the 6th and 2nd French Army Corps.” “Sketch of New Material for the Swiss Quick-firing Artillery.”

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"The French Plan of Campaign of 1870, as revealed by General Lebrun" (*continued*). 18th June.—"Austria-Hungary." "The French Plan of Campaign of 1870, as revealed by General Lebrun" (*concluded*). 22nd June.—"Germany and France." "The Organisation of the Field Artillery." 29th June.—"On the Transmission of Telegrams in Time of War." "Our Army Horses and the Veterinary Service."

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SPAIN.—*Memorial de Ingenieros del Ejército.* Madrid: June, 1898. "Outlines of Defence, Fortification, and Armament of Maritime Positions" (*continued*). "Operations Against the Insurgents of Cavite" (*continued*). "Education of the Sappers and Miners" (*continued*). "Protection of Telephone Lines."

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The Naval Annual, 1898. By T. A. BRASSEY. 8vo. Portsmouth: Griffin and Co. 1898.

The present issue of the Annual is, in many respects, the best which has yet been published of this now valuable work of reference.

In the first part are, as usual, several papers by well-known writers on naval matters, all of interest. "The Progress of Foreign Navies," by M. Weyl, is most carefully written and brought up to date. The Editor himself contributes three papers, viz., "The Progress of the British Navy," "Relative Strength with Comparative Tables," and "The Manning of the Navy in Time of War." It is satisfactory to note that Mr. Brassey, who is one of the few civilians who might claim to be a naval expert, is of opinion that for the present, any way, we are capable of holding our own against a combination of France, Russia, and Germany. It is quite certain that, as far as first-class battle-ships are concerned, it is a long time since we have held so strong a position as against France and Russia as we do now, and there seems no reason why this superiority should not be maintained. It is, therefore, difficult to see on what grounds the attempts being made in certain quarters to create a scare about our naval strength are justified. Mr. Brassey is of opinion, and many officers will be found to agree with him, that the time has now come when the Admiralty might well build a certain number of smaller battle-ships, which would be sufficiently powerful to cope with the Russian "Sissoi Velikie" and the French "Bouvines" and "Henri IV.," especially as three vessels of such a type could be built at the cost of two "Majestics," and would be more useful in the North Sea and the Baltic. In his paper on "The Manning of the Navy in Time of War" Mr. Brassey considers it exceedingly desirable that arrangements should be made for recruiting in the Colonies for both the Army and the Navy, and few will be found to disagree with these views.

There is a very interesting account of the Russian Navy by Lieutenant Strommille of the Imperial Admiralty, in which he describes the system of administration, the *personnel*, and material in a wonderfully complete but concise manner.

Sir George Clarke, rather boldly, as he is a soldier, discusses the thorny problem of scouting in war; while another interesting paper is by Commander Robinson on "Naval Reinforcement in War-time: Armour and Armament."

In Part II., which is devoted as usual to the tables of British and Foreign armoured and unarmoured ships, with the plans of ships, a great improvement has been effected by the re-drawing on a smaller scale of many of the plates, and the work of re-drawing has been on the whole most carefully done, the new plates being far superior to the old. It seems a pity, however, that the change effected in the armament of the "Amiral-Baudin" and "Formidable" by the substitution of a central battery with four 8-2-inch Q.F. guns in casemates for the 37-centimetre (14-5-inch) gun formerly carried has not been shown on the new plate, instead of the information being given in a foot-note.

The illustrations of ships are as usual beautifully executed, adding much to the value of the book ; and altogether the Editor is to be heartily congratulated on having produced the best number of the Annual which has yet appeared, and Lord Brassey may well feel satisfied to see how ably his work is being carried out by his successor in the editorial chair.

Daily Life during the Indian Mutiny. By J. W. SHERER, C.S.I. London : Swan Sonnenschein and Co.

Books of the class of Mr. J. W. Sherer's "Daily Life during the Indian Mutiny" should certainly be read in conjunction with those ponderous tomes, too frequently misleading, almost invariably verbose, by means of which military historians endeavour to enlighten an ungrateful public.

How refreshing, for instance, to the weary student to lay down his "Malleson," to strain no longer his imagination in the endeavour to locate the barbarous Hunterian "Kahnups" and "Lakhnaos," which obscure the writings of that laborious scribe, and to turn to such narratives as that under consideration ! In Mr. Sherer's pages the reader is taken, as it were, through green pastures ; even when he reads of horrors, of battle, murder, and sudden death, the charm of the narrative exercises its soothing influence ; no arid waste of profitless discussion lies around him, no rocky heights of strategical criticism have to be surmounted. To those readers then who enjoy their history most in homeopathic doses, who appreciate picturesque and not too serious descriptions of a momentous period, and, above all, who can taste a most refined and finished style, Mr. Sherer's narrative can confidently be recommended.

On the outbreak of that revolt against the British rule in India, which we are pleased to call the "Mutiny," Mr. Sherer, who had spent nine-and-a-half years in the Indian Civil Service, was Collector of Futtehpore-Hussowa, a district situated between Cawnpore and Allahabad. Futtehpore proved to be untenable, and the little knot of Europeans stationed there, having held their ground as long as was possible, took refuge in the neighbouring district of Banda. The judge of Futtehpore, Robert Tucker, a man of noble, if eccentric, character, unfortunately determined to make for Delhi, under the belief that it was at the capital that the restoration of British rule would commence. It is well known that he was killed by the rebels after a gallant resistance, and the manner of his death and the reasons of his isolation are clearly and convincingly set forth by Mr. Sherer.

Banda, with its burlesque Nuwab and his hangers-on, is admirably described, but it too proved an insecure asylum, and Mr. Sherer and his companions went on their way towards Allahabad, to which place they had now determined to proceed. At Mirzapore they fell in with Major Stirling and the 64th Regiment—many of them destined to fall in Windham's battles before Cawnpore—and at Allahabad Mr. Sherer met "a tall, broad, full-fleshed man in khakee uniform dress, and a turbaned helmet." This was Brigadier-General Neill, the avenger of Cawnpore. After a stay of two or three days, Mr. Sherer left Allahabad as civil officer accompanying Havelock's force, and proceeded with it in its famous advance on Cawnpore. Passing over the very interesting narrative of this feat of arms, special attention is called to Mr. Sherer's remarks on the Well of Cawnpore. Premising that he was one of the first who saw it, Mr. Sherer adds :— "The whole story was so unspeakably horrible that it would be quite wrong in any sort of way to increase the distressing circumstances which really existed. And I may say once for all that the accounts were exaggerated. . . . the whole of the pavement was thickly caked with blood. Surely this is enough, without saying 'the clotted gore lay ankle-deep,' which, besides being most distressing, is absolutely incorrect. . . . Of mutilation, in that house at least, there were no signs, nor at that time was there any writing on the wall." Those whose hearts have been wrung with horror by written descriptions of the

atrocities of the "Beebeeghur" may take some slight comfort from this plain statement.

Mr. Sherer continued in active employment at Cawnpore during the remainder of the Mutiny period, and the value of his services have been fully acknowledged if somewhat charily rewarded. It thus fell to his lot to witness and assist the advance of Outram and Havelock on Lucknow, and the subsequent relief operations of Lord Clyde; and finally he tells in a most animated and interesting manner of the vicissitudes which befall the weak Cawnpore garrison under General "Redan" Windham.

From this brief summary of Mr. Sherer's delightful book, some idea of its general scope may be gleaned; but those who are induced to read it will find much more within its pages than a mere narrative of events. Drawn by the pen of a practised writer, the great actors in the unforgotten tragedy of the Indian Mutiny move before us in their habit as they lived. Clyde, Canning, Outram, Havelock, Hodson, and many other worthies, act once more their part on the stage of our history; once more we are reminded how the gold of English manhood proved its purity when tried as by fire; and if the art of the narrator renders the tale he has to tell light and easy to the reader, so much the greater is the latter's debt of gratitude.

The book is dedicated to General Mowbray Thomson, the only survivor of the Cawnpore garrison, to whose exceptional and unrewarded services the attention of an ungrateful country is apparently unlikely to be drawn.

Drake and the Tudor Navy. By JULIAN S. CORBETT. 2 vols. London: Longmans, Green and Co. 1898.

"Call him on the deep sea, call him up the Sound,
Call him when ye sail to meet the foe;
Where the old trade's plyin' an' the old flag flyin',
They shall find him ware an' wakin', as they found him long ago."

—*Drake's Drum.*

In this most excellent work the author gives us a masterly sketch of the events which led to this country's rise to the position of becoming "a controlling force in the European system by virtue of her power upon the sea." He has done it, moreover, in the most interesting fashion in which it could be accomplished, for he has centred his history of the movement on the life of the great British admiral who was the prototype of the long line of sea heroes whose names illumine British history. All the myths and false impressions that surround the story of him who, after Nelson, was perhaps our greatest British admiral, Mr. Corbett sweeps aside, and we have before us the man as he was. Not only as the dashing corsair and brilliant explorer, but also as the great admiral and statesman is Drake here depicted. To restore Drake to his rightful position "as one of the great military figures of the Reformation" has been Mr. Corbett's task, and most ably he has accomplished it. Contemporary opinion of Drake before the romance of his career had overshadowed the real work done throughout it, is well pictured by Stowe:—"He was more skilful in all points of navigation than any that ever was before his time, in his time, or since his death. He was also of perfect memory, great observation, eloquent by nature, skilful in artillery, expert and apt to let blood and give physic unto his people according to the climate. . . . His name was a terror to the French, Spaniard, Portugal, and Indian. Many princes of Italy and Germany desired his picture. . . . In brief, he was as famous in Europe and America as Tamberlane in Asia and Africa." In the first volume we have the story of Drake's youth and upbringing, and his earlier services down to the close of the famous voyage of circumnavigation. In the second volume the stirring days of the Armada are dealt with, and the great admiral's career is followed down to the day "he yielded up his

spirit like a Christian to his Creator quietly in his cabin." Here is how Mr. Corbett sums up in vigorous language the period and the man :—

"The Elizabethan age, high as it rose beyond all that had gone before, yet lacked the greatness of spirit that could recognise and trust implicitly a heaven-born admiral, as a riper age could trust Nelson. So it came about that he was denied the opportunity of proving the tremendous force of his ideas, and he passed to posterity, as the narrow view of his contemporaries could see him, with a renown, it is true, so great as to become at once almost mythical, yet not for what he was. For those who reaped the harvest he had sown, he lived not as the father of a new art of war—which, with an originality of conception, a directness of purpose, and a breadth of view hardly ever surpassed, he created out of the fulness of his genius—but rather as a daring navigator and a prince of corsairs of whom we are half ashamed to be proud." And yet, even as the great admiral's spirit passed to the unknown, England was, thanks to Drake and his compeers, "fairly launched upon the course that brought her to the empire of the seas."

Mr. Corbett has had a noble theme with which to deal, and has dealt with it nobly. "Drake and the Tudor Navy" is a book that enriches the naval literature of the country, and the latter owes Mr. Corbett a deep debt of gratitude for its production.

Six Centuries of Attack and Defence. London: The Comparative Synoptical Chart Co., Ltd., 11, Leadenhall Buildings, E.C.

The "Scaife System" is an ingenious idea applied to the construction of historical charts, whereby the factors of space which are appreciable to the eye are made to represent factors of time which are not so appreciable. In this way, and by a profuse use of graphic presentation, the powers of another organ are enlisted in the service of the memory with excellent results.

"Six Centuries of Attack and Defence" is the first of a series of military charts compiled by Captain B. R. Ward, R.E., and in it a very successful attempt is made to present the principal facts connected with the joint histories of fortification and artillery from the earliest times to the present day.

On either side of the chart is a vertical time-scale representing a period which covers all between the thirteenth and nineteenth centuries inclusive, and subdivided into sections of twenty years each. Horizontal lines across the body of the chart facilitate the identification of each entry with its proper date. Vertical columns of varying width are devoted to separate topics of the general subject, and consequently by the aid of the scale the development of each topic is easily seen at any point during the period under consideration.

A list of the topical headings will best indicate the exhaustive manner in which the subject has been treated. They are :—Materials used in Fortification, Artillery, and Projectiles; Trace of Fortifications; Tactical Predominance of various arms; Eminent Engineers, Artillerists, and Scientists; Tables of English Monarchs and important Wars; Improvements in Artillery and Small-Arms; Evolution of a Typical Siege Gun; and the Weight of Projectile of Typical Heavy Gun.

Captain Ward has marshalled an immense number of facts in relation to each of these subjects in such a clear manner that even the lay mind may obtain a conspectus of this difficult subject unobtainable in any other way even by the expert, after much labour and research.

So far regarding the synoptical character of the chart, but it is the comparative feature which is at once the most interesting and instructive. Cause and effect can here be followed unobscured by that cloud of words and the accompanying loss of the sense of contemporaneity which inheres in the printed page. Take an instance :

Cast-iron shot is introduced, and by lessening the necessary calibre of the gun increases its mobility, and thus enables the attacker to bring into action a much larger siege train. The old superiority of the defence vanishes with the departing effectiveness of those high walls of exposed masonry which characterised the mediæval fortification. But the engineer changes his weapons, and substitutes earth for masonry, and invents the bastion trace. So the duel proceeds, with its moves and counter-moves right up to to-day.

This is only an instance, and as every part of the chart is made up of details which lend themselves to comparisons equally instructive, it must serve as the only one possible in the limited space which can be given.

An Outline of Reconnaissance. By Captain E. D. PARKER, late 1st Bn. Manchester Regiment. London: E. Stanford, Charing Cross. Price 2s.

This handbook is a brief review of the elements of military topography, and may be found useful to students. The more advanced portions are only lightly touched upon.

The Naval Pocket Book. By W. LAIRD CLOWES. 12mo. London: Thacker and Co. 1898.

This is the third year of the issue of this useful little book of reference. It contains a great mass of information not to be found in other works of the same kind, while its convenient size ought to recommend it to all naval officers. It has lately passed into the hands of a new editor, who we believe is about to introduce some improvements which are rather needed. The paper on which it is printed is not good, while the plans of the ships are too few and are also printed badly, and there are many details relating to ships which require correction and bringing up to date. Nevertheless, the book should have a future before it, and we have no doubt that in Mr. Laughton's hands that future will be secured.

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27th	W. O. Stuart	1,796
41st	G. M. Herbert	1,729
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43rd	G. D. Baillie-Hamilton	1,722
44th	T. J. Marrable	1,722
49th	A. G. Lind	1,700
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57th	O. R. L. Hampden	1,678
58th	H. V. Roe	1,669
62nd	F. K. Pomeroy	1,659
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75th	J. A. Doig	1,604
79th	W. R. Cowie	1,593
80th	F. A. C. Hamilton	1,590
85th	G. T. D. Hickman	1,583
88th	H. R. Sandilands	1,578
—	*J. F. Scobell	1,560
—	*J. O. Greenwood	1,513
West India	A. Cameron	1,508
”	A. C. Mackinnon	1,379
”	M. M. H. Nevile	1,285
Second University	C. S. Dixon	1,273
10th	H. G. R. Burges-Short	1,277
	*Subsequently admitted.	1,268

In MARCH, 1897, Twenty-Three passed.

